# ANALYSIS OF FINANCIAL STRUCTURE OF PRIVATE LIMITED MANUFACTURING COMPANIES

## (With reference to selected units in Mekelle zone)

Research project submitted to Mekelle University department of Accounting and finance for the award of the degree of Master of Science in finance and investment

**By**

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June, 2010

STUDY ON

# ANALYSIS OF FINANCIAL STRUCTURE OF PRIVATE LIMITED MANUFACTURING COMPANIES

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# DECLARATION

I, Haileslasie Tadele, hereby declare that the project work entitled "Analysis of Financial Structure of Private Limited Manufacturing Companies- With Special Reference to Selected Units in Mekelle Zone" submitted by me for the award of the degree of Masters of Finance and Investment of Mekelle University at Mekelle, is my original work and it has not been presented for the award of any other Degree, Diploma, Fellowship or other similar titles of any other University or institution.

Place: Mekelle

Signature: ----------

Date: June, 2010

Name: **Haileslasie Tadele**

# CERTIFICATION

This is to certify that this Project work titled "Analysis of Financial Structure of Private Limited Manufacturing Companies- with Special Reference to Selected Units in Mekelle Zone" is the bonafide work of Mr. **Haileslasie Tadele** who carried out the research under my guidance. Certified further, that to the best of my knowledge the work reported here in doesn't form part of any other project report or dissertation on the bases of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Place: Mekelle

Signature: ----------

Date: June, 2010

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**Haileslasie Tadele**

# ABSTRACT

*This paper used financial statement data for the period 2004-2009, from Ethiopian Revenue and Custom authority,Mekelle branch, to analyze the financial structure of Private limited manufacturing companies. Five companies have been considered for the study, out of the total 25 companies in Mekelle. They are selected purposively based on a criteria, a company established prior to 2004 and which have adequate financial statements. A questionnaire is distributed to finance managers of the companies, to collect the primary data. Various litrature show, finance as a significant determinat for the success of a firm. Hence, it becomes a supporior and debatable topic of argument , yet there is no consensus on the optimal capital structure. This paper detailed the financing pattern and decision of the companies,the challenges the companies are facing and examined the relationship between firm characterstics and financial leverage, measured in terms of total debt, long term debt and current liability. Descriptive statistics and OLS multiple regression analysis was employed. The descriptive statistics depicts that majority of the firms finance their assets using short term debt and their financing strategy is debt deriven.Collateral requirement is found to be the major constraint, as a result firms have prefered for current liabilities such as trade credits and accruals which are the major component of the short term liabilities.The multiple regression analysis revealed that explanatory variables determine leverage differently. Size,profitability and tangebility of asset are found to be significant determinants of total debt and long term debt and liquidity determines both current liability and total debt. Growth is not a significant determinat for financial leverage. Size, collateral and profitability have an opposite relation between long term and short term debt. Size and collateral found to have strong significant effect on long term debt than short term debt, liquidity has a strong significant effect on short term debt, but not for long term debt. The results for leverage(total debt) are generally supportive of the pecking order theory explanations.*

***Key words**: Financial structure ,Manufacturing PLC, Challenges, Financing assets, Financial decision, determinants of financial structure*

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# ABBREVIATIONS

| | |
|---|---|
| **BOTI** | Bureau of Trade and Industry |
| **CLR** | Current Liability Ratio |
| **CLRM** | Classical Linear Regression Model |
| **ERCA** | Ethiopian Revenue and Custom Authority |
| **FL** | Financial Leverage |
| **LDR** | Long term Debt Ratio |
| **LIQ** | Liquidity Ratio |
| **OLS** | Ordinary Least Square |
| **PLc** | Private Limited Company |
| **SOA** | Structure of Asset |
| **TDR** | Total Debt Ratio |
| **USITC** | United State International Trade Commission |

# CHAPTER ONE
## INTRODUCTION

This chapter comprises the back ground of the study, statement of the problem, research questions, Justification of the study, research objectives, research hypothesis, significance of the study, scope of the study, limitation of the study and organization of the study. Hence, it emphasizes the theoretical and conceptual background of the study.

### 1.1 BACK GROUND OF THE STUDY

Finance is playing an increasingly significant role in modern economies. The financial structure is given by the structure of the total liabilities recorded in the enterprise's balance sheet, and gives emphasis about the composition and relative importance of various institutional arrangements in a financial system. The financial structure varies across countries; it depends on the economic development and policies of the countries, where pecking order theory tries to generate ideas that firms will use hierarchy of financing (Suhaila and Wan Mansor, 2008). First internal funds, if these are not adequate they will finance with external funds with debt and equity respectively. But this may not be true for all countries. As various studies show, firms in developing countries use less internal finance than firms in developed countries and firms in developing countries rely more heavily on equity than on debt to finance investment compared to developed countries (Hamid and Singh, 1992 cited in Cornelia , 2008).The financial structure may also vary from industry to industry or sector to sector or company to company, indicating that there are firm specific characteristics that determine the financial structure decisions along the macroeconomic characteristics of the country in which the firm is operating in. Different literatures show that the decision regarding the financial structure depends not only on each company's objectives of economic growth, on the foreseen profitability level and on the risk that the company agrees to assume, but also

on third parties which include share holders, banks and other creditors and the state of the economic circumstances as well(Batrancea, eta'l, 2006).

Sizes of the company, earnings volatility are also identified to have a positive relationship with debt financing (Bradley, eta'l, 1984, Marsh, 1982, Smith and Warner, 1979, Warner, 1977, cited in Francesco, 2005) and (Keshar, 2004).

The goal of the management in financing decision is maximizing the firm's value. This needs a care full understanding about the environment where the firm is operating which is very uncertain world which requires a tough task ahead in achieving the best financial structure. Various literature show that financial distress, liquidation and bankruptcy are the ultimate consequences lay ahead if any major misjudgment occurred following any financing decision of the firm's activity (Suhaila and Wan Mansor, 2008).The firm should make a financial decision always taking in to considerations all the risks and returns involved with the specific mix of different alternative source of finance. The key to choose appropriate and acceptable level of financial leverage is still debatable topic for top managements of a firm (Joshua, 2008; Keshar, 2004; Laurent, 2001 and Myers, 1977).

Many theories and empirical evidence in providing optimal financial structure exists in the real world. Yet there is still debatable concept with regard to attaining efficient mixture of debt and equity (Suhaila and Wan Mansor, 2008). Modern finance literature, the trade off theory of the capital structure comes, which is concerned about the corporate finance choices of firms is widely discussed. Its rationale is to describe the fact that firms are usually financed with some proportions of debt and equity. It is proposed principle that a firm's target leverage is driven by tax shield, bankruptcy costs of debt and agency conflicts. This theory affirms the advantages of using debt because the firm can gain tax shield. However, as companies decide to use more debt, it will put companies in the position of financial distress, because the firm may default in meeting its liabilities (Modigliani and Miller, 1963 cited in Suhaila and Wan Mansor, 2008).

Well established and modern financial market and financial system is essential for a country's economic development and active flow of funds. As a result, companies will

get flexible and variety source of fund to function properly. The importance of the financial sector for economic development, and different opinions prevail regarding the financial structure best for economic development are emphasized by different literatures(Botezat and Stoichina ,2004; Btrancea eta'l ,2006; Hall eta'l,2004).

Two main financial structures are described: bank based and capital market based financial systems (Cornelia, 2008; Thorster and Ross, 2000). The structure of the financial system will determine the financing pattern and the financial structure of a firm. Internal sources are the dominant sources of financing in the non financial corporate sector, where in market based financial systems the share of the internal finance is higher than in bank based financial system. Bank sources are dominant form of external finance and are similarly important in bank based and market based financial systems according to the observation made on developed countries (Cornelia, 2008).

## 1. 2. STATEMENT OF THE PROBLEM

Most manufacturing firms perceive access and cost of finance as their major constraints. The failure of small and medium firms in developing countries have identified financial leverage as a major cause of decline (Keshar, 2004; Lahcen and Jawad, 2008; Mathew, eta'l, 2004; Suhaila and Wan Mansor, 2008). As manufacturing companies play an important role in the economy, it is important to examine the financial structure of the companies. Moreover, finance is considered to be the blood of any organization which has a significant effect on the success or failure of any organization, as a result it is vital to analyze the financial structure of the companies.

Literatures on financial structure are concentrated on developed countries (Brav, 2005; Brian, 2002; Demirguc, eta'l, 2000; Laurent, 2001; Sgorb, 2008).But for emerging and developing countries few researches have been made in the area. Studies were conducted on financial structure determinants and its relationship to different variables in developed and developing countries. The studies reviewed so far have not discussed the relationship of characteristics of a firm with its financial structure in context of countries like Ethiopia.

There are different factors that are expected to shape the financial structure decisions; those factors may not equally affect the financial structure decisions in developing and under developed countries as compared to developed countries (Botezat and Stoichina, 2004; Brian, 2002; Hall, eta'l, 2002; Keshar, 2004; Lahcen and Jawad, 2008; Laurent, 2008 and Mathew, eta'l, 2004). There are differences among these countries. In developing countries, where capital markets are less developed, the range of financial instruments available are relatively narrow and lack of rigorous accounting standards and audit controls create higher information asymmetry among stakeholders.

Thus, this study analyzed the characteristics, challenges and financial structure of private limited manufacturing companies with reference to selected units in Mekelle Zone.

## 1.3. RESEARCH QUESTIONS

The researcher has raised the following research questions to meet the objective of the study.

1. What are the challenges that the companies are facing in accessing finance and, how these are affecting the financial structure?
2. How companies are financing their assets?
3. What is the effect of the characteristics of the company on financial structure?
4. How companies are making financial decision?
5. What are the features of the financial structure of the companies?

## 1.4 JUSTIFICATION OF THE STUDY

The manufacturing sector is increasingly recognized as an important component of the economy. Government continues implementing a range of policy initiatives directed toward providing stable macroeconomic conditions, enhancing labor productivity, regional development and technology innovation and transfer, etc. Therefore, it is of value to assess the constraints the industry is facing, where finance is the prime

attention, because, it is the blood of any organization ,which requires proper planning and decision with regard to its mix and source.

The first and foremost purpose of the study is to determine the firm characteristics that affect financial structure. This clarifies the extent of debt and equity used in financing the firms' activity and the sources available in Mekelle zone. Thus, it is hoped that the present study detailed and shed light on the private limited manufacturing companies' financial structure, in which financial structure decision is ambiguous area. So far, various empirical studies show that, there are differences on financial structure of a firm as a result of industry, financial system, financial development and country macroeconomic conditions.

Many theories and empirical evidence on financial structure exists in the real world. Yet, there is still cloudy area and with no specific guidelines to assist financial managers in attaining efficient mixture of debt and equity and effective composition of different sources of finance to finance their assets. Thus, only clues and calculated judgment plus some understanding of financial theory and the financial system of the country are possible tool to be applied in facilitating how the financing mix does affect the firm's performance and what are the obstacles the companies are facing in financial structure decision. It can somehow lead the way for the financial manager to determine the right choices in financial structure policy in the future with country and company perspective.

## 1.5. OBJECTIVES OF THE STUDY

### 1. 5.1. GENERAL OBJECTIVES OF THE STUDY

The general objective of the study is to analyze the financial structure of Private limited manufacturing companies, with reference to selected units in Mekelle zone.

### 1.5.2. SPECIFIC OBJECTIVES

1. To assess the challenges the companies are facing in accessing finance,
2. To assess how the companies are financing their assets,
3. To analyze the effect of the companies' characteristics on their financial structure,
4. To understand the way companies are making financial decisions, and
5. To study the overall financial structure of the companies.

## 1.6. RESEARCH HYPOTHESIS

This study has tested the following null hypotheses to determine the relationship between the identified variables and financial leverage (FL) of Private Limited manufacturing Companies:

**$H_{O1}$**: There is positive significant relation between size and FL

**$H_{11}$**: There is negative significant relation between size and FL

**$H_{O2}$**: There is positive significant relation between Structure of asset and FL

**$H_{12}$**: There is negative significant relation between Structure of asset and FL

**$H_{O3}$**: There is negative significant relation between profitability and FL

**$H_{13}$**: There is positive significant relation between profitability and FL

**$H_{O4}$**: There is positive significant relation between growth and FL

**$H_{14}$**: There is negative significant relation between growth and FL

**$H_{O5}$**: There is negative significant relation between Liquidity and FL

**$H_{15}$**: There is positive significant relation between Liquidity and FL

## 1.7 SIGNIFICANCE OF THE STUDY

Analysis of the relationship between firms' characteristics and its financial structure and the effect of the challenges the companies are facing on their financial structure is essential, it creates a fertile ground for finding out these relationship and can be used as a basis to make financial decision and determination of optimal financial structure and it will also be useful as a reference for further research. As explained below, because this research is limited to selected PLC companies, further research can be done to explore the different factors influencing firm's financial structure decisions. It also helps to fill the knowledge gap, where the study results can be used for further analysis.

## 1.8. SCOPE OF THE STUDY

The study is conducted in Mekelle Zone, to analyze the financial structure of private limited manufacturing companies, with reference to selected units. The financial statements (Balance sheet and Income statement) of the companies ranging from the period 2004 to 2009 are taken for analysis and financial manager of each company is contacted through questionnaire.

The work is delimited with identification of the different sources of finance, the mix of debt and equity, the financial decision made by the companies; the challenges the companies are facing in financial structure decisions and the Firm specific factors affecting the financial decision of the companies.

## 1.9. LIMITATION OF THE STUDY

The study is delimited to private limited manufacturing companies in Mekelle zone; hence, the research does not argue conclusive findings on characteristics challenges and financial structure of manufacturing companies in the entire Tigray as well as in Mekelle. Various factors may hinder or affect the financial structure decisions, in which this study is limited only to the identified variables.

Another limitation encountered by the researcher with regard to the consolidated macroeconomic facts for the time included under study such as inflation, business risk,

GDP, etc of Mekelle Town in particular and the country in general, that can affect the financial decision of the companies, so that it is found difficult to measure how these factors are affecting the financial structure of the companies.

## 1.10 ORGANIZATION OF THE STUDY

This research project is composed of five chapters. Chapter one comprises an introduction part which puts forward the back ground of the study, statement of the problem, Research questions, Justification and objectives of the study, research hypothesis, significance, limitation and scope. Chapter two includes a review of literature to support the research work. Chapter three gives emphasis to materials and methods used to conduct the research project. Chapter four focuses on analysis and discussion of the results and Chapter five comprise summary of findings, conclusions and recommendations. References and the necessary appendices are also attached.

# CHAPTER TWO
# LITERATURE REVIEW

In this chapter, significant conceptual and empirical studies are meticulously reviewed and presented methodologically. The literature review comprises four sections. The first section deals with definition of concepts and terms. The second section puts special emphasis on financial structure in the international perspective. The third section focuses on the financial system development in Ethiopia and the fourth section puts forward empirical studies on determinants of financial leverage.

## 2.1 DEFINITION OF TERMS AND CONCEPTS

### 2.1.1 DEFINITION OF TERMS

**i. Finance** is about how economic agents carry over income and consumption opportunities from one time period to later time periods, that is, how they save or accumulate and hold wealth and how they invest; about how agents finance investments; and how they deal with risk( Reinhard and Aneta ,2006). It is also defined as finance deals with matters related to money and the markets and concerned with resource allocation as well as resource management, acquisition and investment.

**ii.Financial structure:** The financial structure is given by the structure of the total liabilities and equity recorded in the enterprise's balance sheet and details how its assets are financed as defined by (http://www.investorwords.com). It gives emphasis about the composition and relative importance of various institutional arrangements in a financial system (Justin, 2009).

**iii. Financial system**: The financial system is the system that allows the transfer of money between savers and borrowers. It comprises a set of complex and closely interconnected financial institutions, markets, instruments, services, practices, and transactions. Financial systems are crucial to the allocation of resources in a modern economy. They channel household savings to the corporate sector and allocate investment funds among firms; they allow inter temporal smoothing of consumption by

households and expenditures by firms; and they enable households and firms to share risks (http://en.wikipedia.org) and (http://www.businessdictionary.com).

**iv. Financial Distress**: It is tight cash situation in which a business, household, or individual cannot pay the owed amounts on the due date. If prolonged, this situation can force the owing entity into bankruptcy or forced liquidation. It is compounded by the fact that banks and other financial institutions refuse to lend to those in serious distress. (http://www.investorwords.com).

**v. Collateral**: this term refers to one type of guarantee that banks and financial institutions often require for securing loans. Collateral includes buildings, land, equipment or other valuable assets that you pledge as a guarantee on the loan. If the borrower is not able to repay, the lender has the right to seize the collateral which it can resell to regain uncollectible loans (Samantala, 1997).

**vi. Repayment capacity**: is the ability of the borrower to repay back his obligation. A loan term influences disposable income. The shorter the loan term, the larger payments will be necessary (Samantala, 1997).

**vii. Financial costs:** The cost paid for the use of the loan and fees paid to the lender for processing and distributing it; interest and fees are the financial costs (Samantala, 1997) and http://www.ecostructure.com .

### 2.1.2 CONCEPTS AND THEORIES OF FINANCIAL STRUCTURE

#### i. Pecking Order Theory

The idea of a pecking order framework was developed by Myers (1984) to explain variations in capital structure. This argument supports that businesses first use internally generated funds, then external debt and as a last option they will use external equity. The reasons for this ranking were that internal funds were regarded as cheap and are not subject to any outside interference. The ranking of external debt next was due to its being seen as less costly and having fewer restrictions than issuing equity.

External equity is seen as being the most expensive and also dangerous in terms of potential loss of control of ownership. Thus, according to the pecking order hypothesis, firms that are profitable are expected to use less debt capital than those that do not generate high earning (Joshua, 2008).

**ii. The trade-off theory**

This theory claims the existence of an optimal capital structure that firms have to reach in order to maximize their value. The focus of this theory is on the benefits and costs of debt. It is originated by an excessive amount of debt and the consequent potential bankruptcy costs (Kraus and Lichtenberger 1973). Thus, firms set a target level for their debt-equity ratio that balances the tax advantages of additional debt against the costs of possible financial distress and bankruptcy.

**iii. The agency costs theory**

This theory states that the optimal capital structure of each firm depends on the value of debt that mitigates the conflicts between stockholders and managers, on the one hand, stockholders and debt holders, on the other hand. According to this theory, the stockholder-manager agency costs of free cash-flow push firms towards more debt in order to reduce the 'free' cash at managers' disposal (Jensen and Meckling, 1976; as cited in Jensen, 1986).While the stockholder-debt holder agency costs of underinvestment and asset substitution push firms towards less leverage since large debt levels may be an incentive for rejecting value-increasing projects and pursuing risky projects (Myers, 1977)

## 2.2 INTERNATIONAL PERSPECTIVE OF FINANCIAL STRUCTURE

### 2.2.1 HISTORY OF FINANCIAL SYSTEM DEVELOPMENT

Financial markets and intermediaries today are globally linked through a vast international telecommunications network, so that the trading of securities and the transfer of payments go on more or less continuously around the clock. The financial markets include the foreign exchange, fixed income, and equity markets, as well as the new and growing markets for "derivative" securities such as futures, options, and swaps. Capital market functions are also performed by financial intermediaries such as banks and insurance companies, which provide customized products and services. For a variety of reasons including differences in size, complexity, and available technology, as well as differences in political, cultural, and historical backgrounds financial institutions generally differ across borders (www.wikipedia.org).

History shows that people have engaged in financial transactions since early periods such as Sumerian documents reveal the systematic use of credit for agricultural and other purposes in Mesopotamia around 3,000 BC. Barley and silver served as a medium of exchange i.e., money. Even regulation of financial contracts existed in ancient times. Hammurabi's Code contains many sections relating to the regulation of credit in Babylon around 1,800 BC (Merton and Bodie, 1995).

Banking institutions arose in the city-state of Genoa in the 12th Century AD, and flourished there and in Florence and Venice for several centuries. These banks took demand deposits and made loans to merchants, princes, and towns. Security issues similar to their modern form also originated in the Italian city states in the late Middle Ages.

Long-term loans floated by the Republic of Venice, called the prestiti, were a popular form of investment in the 13th and 14th Centuries, and their market price was a matter of public record. Even organized exchanges for trading financial futures contracts and other financial derivatives, which some see as an innovation of the 1980s, are not

entirely new. Similar contracts were widely traded on the Amsterdam securities exchange in the 1600s (Merton and Bodie, 1995).

### 2.2.2. FUNCTIONS OF THE FINANCIAL SYSTEM

The primary function of any financial system is to facilitate the allocation and deployment of economic resources, both across borders and across time, in an uncertain environment (Merton and Bodie, 1995). It covers the ways in which financial decisions can be made and implemented, and in which financial relationships are designed and implemented. The description of the financial system of a given country or region is contained in the answers to the questions of which opportunities the economic agents in this country or region have, and use, to accumulate wealth and to transfer income into the future, to fund investment projects and to manage risk. Thus, the conceptual starting points are financial decisions and activities of non financial firms and households. (Reinhard and Aneta, 2006).

### 2.2.3 BANKS AND INVESTMENT

Banks can enhance domestic investment in various ways by increasing the amount of funds available for investment by pooling savings and by economizing the costs of collecting savings from heterogeneous saving units by exploiting economies of scale in information gathering and processing (Pagano 1993). As a result, for given levels of per capita income and potential saving rate, the actual saving and investment rates should be higher in countries that have more developed banking systems(Francisco and Norman, 2000).

A properly working financial sector channels savings to profitable investment projects and monitors firms to fulfill those projects. Thus, by improving the quantity and quality of firm investment, financial development contributes to enhance the economy's growth performance (Francisco and Norman, 2000**).** In recent years, the common classification or typology distinguishes only between two classes or types of financial systems: the bank-based financial system and the capital market-based financial system. As the name

indicates, banks play the dominant role in a bank-based financial system. They are important providers of financing for firms, and conversely, firms depend to a large extent on bank loans as a source of external financing. Banks are the most important deposit takers within the system (Reinhard and Aneta, 2006**).**

### 2.2.4 FINANCIAL STRUCTURE AND DEVELOPMENT

There are essentially two effects of finance as a source of growth. One is that the sheer quantity of external financing is increased; thus finance contributes to the accumulation of capital, the main engine of growth according to neoclassical theory. The other one is that, through its screening and monitoring functions, finance improves the efficiency of capital allocation, thus contributing to technical progress as the main engine of economic growth (Reinhard and Aneta, 2006).

Firms across countries have different financing structures. These structures are determined not only by firm-specific characteristics that may vary across countries, but also by the constraints posed by countries' degree of financial development and their institutional environment (Stijn and Konstantinos , 2005).

The relationship between financial structure and economic development can be examined on the basis of competing theories of financial structure. These are: the bank-based, the market-based and the financial services. The bank-based theory emphasizes the positive role of banks in development and growth, and, also, stresses the shortcomings of market-based financial systems (Gerashchenko, 1962). It argues that banks can finance development more effectively than markets in developing economies, and, in the case of state-owned banks, market failures can be overcome and allocation of savings can be undertaken strategically. Bank-based financial systems are in a much better position than market-based systems to address agency problems (Singh, 1997; Stiglitz, 1985).The market based system reveal information publicly, thereby reducing incentives for investors to seek and acquire information. Information asymmetries are

thus accentuated, more so in market-based rather than in bank-based financial systems (Boyd and Prescott, 1986).

Banks can ease distortions emanating from asymmetric information through forming long-run relationships with firms, and, through monitoring, contain moral hazard. As a result, bank-based arrangements can produce better improvement in resource allocation and corporate governance than market based institutions (Bhide, 1993; Stiglitz, 1985). By contrast, the market-based theory highlights the advantages of well-functioning markets, and stresses the problems of bank-based financial systems.
Big, liquid and well-functioning markets foster growth and profit incentives, enhance corporate governance and facilitate risk management (Beck and Levine, 2002; Levine, 2002).

Market based financial systems reduce the inherent inefficiencies associated with banks and are, thus, better in enhancing economic development and growth. Financial structure changes as countries go through different stages of development, that countries become more market-based as development proceeds (Boyd and Smith, 1998). An issue of concern, identified by a recent study by World Bank in the case of market-based financial systems in developing countries, is that of asymmetric information. It is argued that the complexity of much of modern economic and business activity has greatly increased the variety of ways in which insiders can try to conceal firm performance (World Bank, 2001).

The third theory, the financial services view is actually consistent with both the bank-based and the market-based views (Levine, 1997; Merton and Bodie, 1995). Although it embraces both, it minimizes their importance in the sense that the distinction between bank based and market-based financial systems matters less than what was previously thought (World Bank, 2001). In the financial services view, the issue is not the source of finance. It is rather the creation of an environment where financial services are soundly and efficiently provided. The emphasis is on the creation of better functioning banks and markets rather than on the type of financial structure.

This theory suggests that it is neither banks nor markets that matter; it is both banks and markets essential for economic development. They are different components of the financial system; they do not compete, and as such restructure different costs, transaction and information, in the system (Boyd and Smith, 1998; Demiurgic and Levine, 2001; Levine, 1997). Under these circumstances, financial arrangements emerge to restructure market imperfections and provide financial services that are well placed to facilitate savings mobilization and risk.

### 2.2.5 FACTORS INFLUENCING FINANCIAL STRUCTURE OF A FIRM

#### 2.2.5.1 MICROECONOMIC FACTORS

There are a number of firm specific characteristics that affect the financial structure decision. These are: tangible assets of the enterprises, those assets that can be used as collateral in order to grant the necessary credits. A company with more property and utilities can use more borrowed capital, and those of high technology which have an accelerated rate of growth use less borrowed capital. when the market price of shares is low, it will not issue shares to achieve the financing, even if large earnings are expected in the near future, as these earnings are not anticipated by investors, and therefore do not influence the price of market shares to increase it. In this case, it is desirable to achieve the financing of borrowed capital until it materializes the earnings and are reflected in price of the share. Only after that, may be shares can be issued and sold and capital can be repaid until the borrower considered optimal (Botezat and Stoichina, 2004). In it turns, profitability influences decisions regarding the financial structure. It was observed that the enterprise which have a large rate of return on investments, recourse less to the borrowed capital. The rationale is that enterprises which have high profitability do not need to use too much borrowed capital to finance the capital; it will be financed from their profits.

Growth rate is another factor to influence the financial structure: Enterprises which have a faster rate of growth turns more to the financing of external capital, creating a

tendency to use debt instruments to a greater extent than enterprises that have a slower growth rate (Rajan 1992). More debt and Size has been viewed as a determinant of a firm's financial structure. Larger firms are more diversified and hence have lower variance of earnings, making them able to tolerate high debt ratios.

### 2.2.5.2 MACROECONOMIC FACTORS

Financial structure is influenced by inflation, cyclical factors, and international culture and other macro economic factors. Inflation is a macroeconomic indicator of great importance, as influencing any economic variable, when inflation and interest rate recorded an equal increase, will decrease the cost of indebtedness by deducting taxes (Botezat and Stoichina, 2004). There are different arguments with regard to the relationship between inflation and capital structure. Some authors maintain that the relationship between the two is negative, because it turns investors borrowed capital in equity because the return on real capital becomes relatively more important than profitability indebtedness. However, most of them argue that there is positive relationship between inflation and capital structure. For example Modigliani argues that inflation should increase the benefit by increasing the indebtedness on which a record financial leverage.

Businesses do not tend to borrow in terms of high inflation, as they pay more expensive financial cost shows contrast to this view (Franks and Broyles, cited in Botezat and Stoichina, 2004).

Periods of economic prosperity and recession will also affect the capital structure. In periods of economic recovery, Companies should be financed from the accumulated profits and stocks, not from debt, because in this case, the long run lending decreases. Moreover, the capital structure of an enterprise is influenced by market conditions on the issuance of shares. When the current price of shares is low, and there is forecast a supplementary earning, issuance and sale of bonds is preferred than shares. Issuance of shares is preferred after the periods of strong performance of market shares, and issuing bonds when interest rates are low or are expected to grow (Botezat and Stoichina, 2004).

There are also International factors that have an influence on the financial structure of a firm such as protectionist strategies, repatriation of capital, government incentives for the collection of funds from abroad. And the cultural factors that have an important influence on the financial structure include: stage of development of capital markets, the social distribution of income, accounting system, tax system, etc (Botezat and Stoichina, 2004).

### 2.2.6 PATTERNS OF FINANCING

In order to determine the choice of financing the enterprise should consider the factors that influence decisions on financial structure. These factors relate to: the structure of assets, the internal conditions of the enterprise, market conditions, profitability, profit margin, growth rate, operational leverage, the instability of sales, taxation, quality of management control of the company, creditors, financial flexibility should be noted. Microeconomic factors such as inflation, cyclical factors, international and cultural factors should also be considered (Myers, 1977). The most common source of external finance is bank finance followed by operations finance. But patterns of finance vary with firm characteristics.

Small firms tend to rely on internal finance to a greater extent, with lower proportions of bank and other finance. There are also differences among industries. Manufacturing firms are the greatest users of external finance, particularly bank finance (Thorsten, eta'al (2002). As expected, the proportion of investment extremely financed is higher in richer, growing countries with low inflation, and developed financial systems. External finance is also higher in developed countries and lower in transition economies.

This is because developed countries tend to have more developed financial systems and better protection of investor rights whereas countries that transition from centralized to market economies are still in the process of developing their financial systems. Looking at individual financing sources, bank and equity finance are higher in richer, high growth, low inflation countries. Development of financial institutions is correlated with bank finance, but not equity finance. Better legal development is associated with more

equity finance but fewer banks and operations finance. As in the case of external finance, developed countries are more likely to utilize bank and equity finance (Demirguc and Maksimovic, 2001). Transition countries are more likely to use equity finance compared to other sources. Other finance is a common source for large, subsidized, government firms and is less likely in developed countries where both banking and capital markets tend to be well developed. Countries with better-developed financial institutions, firms with a greater financing need are more likely to use external finance (Thorsten, eta'al, 2002) Using a unique survey database that has good coverage of small and medium enterprises in 48 countries, it is found that the external financing of firm investment is not a function of institutions. Firms appear to finance similar proportions of their investment using external financing regardless of institutional development (Thorsten, eta'al, 2002).

The difference is that in underdeveloped countries, they are less able to obtain debt and equity finance, therefore they use more operations finance or finance from other sources. In contrast, they found that the form of external finance is predicted by institutional development. The results indicate that legal and financial institutions affect different types of external finance differently. Firm size is a key determinant of whether firms can have access to different types of external finance. The results indicate small firms with greater financing needs cannot obtain external finance as easily as larger firms because of access issues.

Looking at the firm-level obstacles and how they affect access to external finance in countries with different levels of institutional development. In countries with better developed financial institutions, firms with higher financing needs are more likely to use external finance. This relation holds for bank and equity finance, especially for large firms, but not for operations finance and financing from residual sources (Thorsten, eta'al, 2002). These findings are also consistent with the result that firms in countries with more developed institutions use bank and equity finance to a greater extent, whereas in institutionally underdeveloped countries operations finance and financing from residual sources substitute to offset the shortfall in external finance.

### 2.2.6.1 SOURCES OF FINANCE

Raising finance is often a complex process. Business management needs to assess several alternatives and then negotiate terms which are acceptable and easily accessible finance provider. The following are different alternative sources to finance. Firms prefer funding from sources with the lowest degree of asymmetric information since borrowing costs increase when obtaining funds from outside lenders who do not have complete information on the borrowers. Any firm will use them as an alternative source of finance taking in to consideration through cost benefit analysis of the type of finance.

**i. Venture Capital**

Venture capital is a general term to describe a range of ordinary and preference shares where the investing institution acquires a share in the business. Venture capital is intended for higher risks such as start up situations and development capital for more mature investments

**ii. Grants and Soft Loans**

Government, local authorities, local development agencies and the European Union are the major sources of grants and soft loans. Grants are normally made to facilitate the purchase of assets and either the generation of jobs or the training of employees. Soft loans are normally subsidized by a third party so that the terms of interest and security levels are less than the market rate.

**iii. Invoice Discounting and Invoice Factoring**

Finance can be raised against debts due from customers via invoice discounting or invoice factoring, thus improving cash flow. Debtors are used as the prime security for the lender and the borrower may obtain up to about 80 per cent of approved debts. In addition, a number of these sources of finance will now lend against stock and other assets and may be more suitable than bank lending.

**iv. Hire Purchase and Leasing**

Hire purchase agreements and leasing provide finance for the acquisition of specific assets such as cars, equipment and machinery involving a deposit and repayments over, typically, three to ten years. Technically, ownership of the asset remains with the lessor

whereas title to the goods is eventually transferred to the hirer in a hire purchase agreement.

**v. Loans**

Short term loans, Medium term loans and long term loans are provided for specific purposes such as acquiring an asset, business or shares. The loan is normally secured on the asset or assets and the interest rate may be variable or fixed.

**vi. Bank Overdraft**

An overdraft is an agreed sum by which a customer can overdraw their current account. It is normally secured on current assets, repayable on demand and used for short term working capital fluctuations.

**vii. Equity**

Firms may also finance their activity through sale of common stock or preferred stock shares. Common stock generally is a stock that carries voting rights and the preference share is a share which gives preference to common stock shares. Proportionally to their ownership, shareholders have the right to share the issuer's future profits although the return to shares is not specified in advance and thus uncertain. In the case of liquidation, shareholders are "residual claimers" whose rights to the firm's assets are subordinate to creditors (http://tutor2u.net/business/finance/).

## 2.2.6.2 STRATEGIES TO FINANCE ASSETS

**i. Maturity Matching Approach:** Financing strategy that attempts to match the maturities of assets with the maturities of the liabilities with which they are financed. All of the fixed assets and the permanent current assets are financed with long-term debt and equity provided by the firm's owner's.

**ii. Aggressive Approach:** All current assets, both temporary and permanent, are financed with short-term financing. Only fixed assets are financed with long-term debt and equity funds.

**iii. Conservative Approach:** Except for automatic or "spontaneous" financing provided by accounts payable and accrued liabilities. All financing is done through

long-term debt and equity funds. At times, firms will have excess liquidity, when available funds exceed necessary current asset levels. During this time the firm will have large cash balances and will probably seek to invest the excess cash in marketable securities (Aswath, 1997).

### 2.2.7 FINANCIAL OBSTACLES

For most firms access to external financing is costly: firms are either shut out of the market for external financing or there is a positive relation between the use of external finance and the financing obstacles firms face. However, institutions have an important role to play in this relation. Firms that report higher financing obstacles are less likely to be self-financed and more likely to use external finance in more developed financial systems (Rajan and Zingales, 1998). But there are differences based on the type of financing and the size of the firm that needs it. Large firms use bank and equity finance, despite evidence that it is costly. Smaller firms find it more difficult to access the financial system to obtain debt and equity for all levels of institutional development (Stijn and Konstantinos, 2006). The correlations with firm-level financing obstacles indicate that firms that use operations and other finance report higher obstacles, whereas those that use equity finance report lower obstacles.

As inflation increases, both the likelihood that a firm obtains external financing and the proportion of investment financed externally decline. Again, there are differences across sources of finance. Firms in high inflation countries are less likely to access bank loans and use a smaller proportion of loans in their financing mix (Stijn and Konstantinos, 2006).

Empirical findings on the determinants of financing constraints by Leaven (2003), shows that financial liberalization in developing countries relaxes financing constraints of firms, particularly smaller ones. Employing a sample of 36 countries, the result, verified that financial development affects firms' investment by increasing the availability of external finance (Stijn and Konstantinos, 2006). This effect is stronger for financially constrained firms in countries with low levels of financial development.

Similarly, it is illustrated that industries requiring more external finance grow faster in more developed capital markets (Rajan and Zingales, 1998). The same result is confirmed regarding the impact of institutional arrangements: particularly the quality of the legal system in reducing financing constraints (Demiurgic and Maksimovic, 1998). Specifically investigating creditor protection, it is found that the presence of private credit registries in a country is associated with lower financing constraints and a higher share of bank financing (Love and Mylenko, 2003).

## 2.3 FINANCIAL SYSTEM IN ETHIOPIA

To see the history of financial development in Ethiopia different literatures use the periods during Derge regime and current regime, though financial institution development in Ethiopia goes back to Menilik's reign. Under state socialism (1974-91), popularly referred to in Ethiopia as the 'Derg regime', financial institutions were basically executing the economic plans outlined by the government. In that period regulation and supervision were not critical because the national plan regulated and directed the activities of financial institutions. Moreover, financial institutions were directed to finance some public projects that may not have passed proper financial appraisal but were simply based on either ideological grounds or merit wants arguments (Alemayehu, 2006).

It is pointed that following the demise of the Derg regime in 1991, post-1991 economic policy witnessed a marked departure from the previous Socialist system. The main difference lay in openly adopting a market-oriented economic policy.

This new change in policy brought about a significant change in the functioning of the financial sector. Not only was the financial sector going to serve the private sector, which had hitherto been demonized, but new private financial institutions were also emerging. At the same time the role of the National Bank of Ethiopia (NBE), was also reformulated. Thus, financial sector reconstruction was at the top of the government's agenda (Alemayehu, 2006).

In undertaking this task the Ethiopian government adopted a strategy of (*a*) gradualism: gradual opening up of private banks and insurance companies alongside public ones, gradual liberalization of the foreign exchange market, and so on, and (*b*) strengthening domestic competitive capacity before full liberalization (that is, restricting the sector to domestic investors, strengthening the regulatory and supervision capacity of the NBE, giving the banks autonomy, and opening up the interbank money market).Since 1992, Ethiopia has been gradually liberalizing its financial sector. The hallmark of the strategy is gradualism. This approach, however, is not without problems. The international institutions which sponsor and financially support the liberalization process, especially the IMF, are not satisfied with the pace of liberalization (Alemayehu, 2006).

Lack of financial development reflects general underdevelopment and is both a consequence and a cause of general underdevelopment. A low level of financial development shows up in a lack of financial institutions, in inefficiency and instability of those institutions that exist and in a financial sector that does not provide services to a large part of the economically active population. In many developing countries not only the really poor but also middle class business people do not get bank loans **(**Reinhard and Aneta, 2006). In Africa, and especially in east Africa, the financial system is poor and with limited products that can satisfy the need for finance.

According to a survey conducted by USAID, east African countries financial system is characterized having high interest rates, high levels of liquidity, lack of long-term capital, large sectoral and regional imbalances in access to credit, limited product lines. To make the financial system accessible to all, there is a need to create enabling environment for the expansion and growth of the financial institutions and markets. In absence of enabling environment, financial institutions fail to improve their services on sustainable basis as to quality and quantity (USAID, 2009).

As per the survey of USAID, creation of enabling environment for financial systems includes, maintaining stable macro-economic condition, ensuing their soundness and developing stronger underlying infrastructure including information and legal

dimensions. This lies on creating an environment with strong financial institutions and alternative financial sources for Business operation.

Taking in to consideration of the need for financial development, the government is designing and issuing laws and proclamation for regulating the financial system and allowed for establishment of private financial institutions, though Investment in financial institution is restricted to Domestic investors and the financial products are limited. But still there is lack of an alternative source of finance, where different businesses are facing challenges in their financial structure decisions (USAID, 2009).

## 2.4 EMPIRICAL STUDIES

There are many factors which impact on the financial structure of a firm. These factors will influence firms' financing choices in that firms will choose their desired level of gearing according to these factors and conditions prevailing in the capital market. The factors impacting on capital structure can be classified into 3 categories namely the firm specific characteristics, industry factors and market related variables. However the analysis will concentrate only on the firm specific characteristics.

### i. PROFITABILITY

On a research conducted cross country profitability found to be negatively correlated with leverage in France and the United Kingdom. This finding provides evidence in favor of the pecking-order hypothesis, according to which firms prefer to rely on internal financing rather than external financing. It is found that, there is no significant relation between profitability and leverage for the Czech Republic and Poland. This may come from the weakness of retained earnings in transition countries that allows the positive effect of profitability on leverage, as a positive signal for banks, to offset the influence of the preference of firms to use their internal financing(Laurent, 2001).

As different Authors empirical studies show, there are conflicting theoretical predictions on the effects of profitability on leverage. Two opposite effects of profitability on

leverage can be suggested. On the one hand, a high profitability is considered as a positive signal for banks, as it reduces the Bankruptcy risk of the company. A positive relation may then be expected. On the other hand, it is suggested that, the pecking-order hypothesis, in which firms prefer to finance with internal funds rather than debt (Jensen, 1986; Mayer, 1988; Myers, 1977).

Based on relative costs resulting from differences in information asymmetries, this assumption is corroborated in developed countries by the importance of retained earnings in the sources of financing.

The static trade-off hypothesis pleads for the low level of debt capital of risky firms (Myers, 1984). The higher profitability of firms implies higher debt capacity and less risky to the debt holders. So, as per this theory, capital structure and profitability are positively associated. But pecking order theory suggests that this relation is negative. Since, as stated earlier, firm prefers internal financing and follows the sticky dividend policy. If the internal funds are not enough to finance financial requirements of the firm, it prefers debt financing to equity financing (Myers, 1984). Thus, the higher profitability of the enterprise implies the internal financing of investment and less reliance on debt financing. Although more profitable firms would be more likely to get access to external sources of capital, they will prefer inside funds to finance their operations and investments (Michaelas, eta' al, 1999; Rajan and Zingales, 1995).

**ii. GROWTH**

The literature on the impact of expected growth is conflicting and different proxies for this variable are used. Here the growth variable is defined as the percentage change in total sales from the previous to the current year. Firms with less growth prospects should use debt (Jensen, 1986; Stulz, 1990). Firms with growth opportunities may invest sub optimally, and therefore creditors will be more reluctant to lend for long horizons A high growth is positively valued by banks, as it is generally considered as a proxy signal for the good financial health of the company (Laurent 2001).

The pecking order theory suggests that firms place a greater demand on the internally generated funds of the firm. Consequently, firms with relatively high growth will tend to look outside the firm to finance the growth and new investments. Therefore these firms will look to short-term less secured debt than to longer-term more secured debt for their financing needs. Small and medium enterprises, growth opportunities and leverage are positively related because small and medium enterprises mainly use short-term debt financing (Michaelas, eta' al, 1999).

Thus based on the pecking order considerations, the relationship between growth opportunities and leverage is predicted to be positive. In support of the theoretical predictions of the agency theory, firms with growth opportunities should use less debt in order to mitigate agency problems (Myres, 1977). Myers argues that due to information asymmetries, companies with high leverage ratios might have the tendency to undertake activities contrary to the interests of debt-holders. To compensate for this risk, debt-holders would charge a higher risk premium and also impose debt covenants which would restrict the freedom of directors and managers. Therefore, to avoid such debt agency costs, growing firms are expected to be less reliant upon debt finance.

There are two main reasons for the negative relationship between growth and leverage, Firstly, it is expected that as growth opportunities increase, the cost of financial distress also increases. Secondly, firms prefer to issue equity when the stocks are overvalued (Rajan and Zingales, 1995). The trade-off theory also points a negative correlation between growth and leverage. This can be explained by the fact that although growth opportunities add value, the firm cannot use growth opportunities as security for lenders (Titman and Wessels, 1988; Chung, 1993).

**iii. SIZE**

There are conflicting predictions on the effects of size on leverage, as suggested by the ambiguous results from empirical literature. On the one hand, size can be considered as a proxy of failure risk as big firms are more diversified and fail less often than small ones. Consequently, banks should be more willing to lend money to large companies and the relation should be positive. On the other hand, large companies may have an

easier access to financial markets and benefit from better financial conditions on these markets when requesting new issuance of capital. As a result, the relation should then be negative between leverage and size (Laurent, 2001).

There are several theoretical reasons why firm size would be related to the capital structure. Firstly larger firms are likely to have a higher credit rating than smaller firms and thus have easier access to debt financing due to lower information asymmetry. Hence larger firms are more likely to have higher debt capacity and are expected to borrow more to maximize the tax benefit from debt because of diversification and hence have lower variance of earnings, making them able to tolerate high debt ratios (Rajan and Zingales, 1995).

Smaller firms may find it relatively more costly to resolve informational asymmetries with lenders and financiers, which discourage the use of outside financing (Castanias, 1983; Titman and Wessels, 1988; Wald, 1999 cited in Joshua, 2008). and smaller firms should increase their preference for equity relative to debt (Rajan and Zingales, 1995). Empirical evidence findings on the relationship between size and capital structure supports a positive relationship (Mathew, eta'al, 2004). This result is consistent with the trade-off theory considering firm size.

Relatively larger small and medium enterprises find it easier to access short-term credit (such as trade credits). With respect to quoted firms, the results indicate that larger firms are more likely to acquire both long-term and short-term debt finance in their operations (Laurent, 2001). It is found a positive association between firm size and long-term debt ratio, but a negative relationship between size and short-term debt ratio (Esperança, et al., 2003; Hall, et al, 2004).

**iv. ASSET STRUCTURE**

The ratio of fixed assets to total assets represents the degree of assets' tangibility of a firm. Bank financing will depend upon whether the lending can be secured by tangible assets (Berger and Udell, 1998; Storey, 1994). The asset structure of a firm plays a significant role in determining its capital structure. The degree to which the firm's assets are tangible should result in the firm having greater liquidation value by pledging the firm's assets as collateral. This will result in firms with assets that have greater liquidation value having relatively easier access to finance at lower cost, consequently leading to higher debt or outside financing in their capital structure and the hazard moral problem is then reduced (Bester and Hellwig, 1989).

One way to measure tangibility of assets is collateral. Collateral reduces agency problems with debt holders. It reduces bankruptcy costs and credit risk, because in case of bankruptcy the debt holders can sell off the collateral. Therefore, the trade-off theory predicts a positive relationship between collateral and the debt level (Joshua, 2008).

Collateral also reduces the problem of information asymmetry and therefore also the pecking order theory implies a positive influence (Hans, eta'al, 2009; Titman and Wessels, 1988).

On a research with respect to quoted firms' sample, the long-term debt ratio has found to have a significantly negative correlation with asset structure. For the unquoted firms' sample, long-term debt ratio is significantly and positively related to asset structure. In terms of the small and medium enterprises sample, the results show a statistically significant and positive correlation between long-term debt ratio and asset structure. Short-term debt ratio also showed a statistically significant negative correlation with asset structure (Laurent, 2001).

On a paper theory of capital structure: evidence from investment and non investment firms, found that ,Asset structure for investment companies is found to be negatively and insignificantly related to leverage. Consistent with the agency theory, firms with tangible assets will support more debt as tangible assets reduce agency costs since debt can be secured with known tangible assets that have alternative redeployable uses in

case of default (Mathew, 2004). The larger the share of tangible assets in total assets for a company the higher the collateral value when requesting a loan. Therefore, this increases the possibilities of banks to secure loans and then to have a higher residual value of the loan in case of default. This therefore implies the positive association between asset structure and leverage (Laurent, 2001).

**v. LIQUIDITY**

Liquidity is a second dimension of the asset structure of a firm. Liquidity measures the potential to meet short term debt obligations. An illiquid firm will be restricted in attracting debt, since bankruptcy costs are high. The trade-off theory therefore predicts a positive relationship between liquidity and the debt level (Hans, eta'al, 2009). Thus firms with highly volatile earnings borrow the least and prefer equity to debt. The risk of bankruptcy affects capital structure of firms. Liquidity ratios may have a mixed impact on the capital structure decision (Baxter, 1967; Warner, 1976).

Companies with higher liquidity ratios might support a relatively higher debt ratio due to greater ability to meet short-term obligations. On the other hand firms with greater liquidities may use them to finance their investments. Therefore, the companies' liquidities should exert a negative impact on its leverage ratio (Ozkan, 2001). The fact that, when a firm uses more current assets, it means that it can generate internal inflows which can then use to finance its operating and investments activities. Therefore, if the negative relation is confirmed, there is an implication that firms finance their activities following the financing pattern implied by the pecking order theory. Firm with high liquidity is able to generate high cash inflows and in turn, can employ the excess cash inflow to finance their operations and investment activities. Therefore, they use less debt compared to those firm that have low liquidity as suggested in pecking order theory. As for low liquidity firms, they tend to go for debt in financing their activities (Suhaila and Wan Mansor, 2008).

# CHAPTER THREE
# MATERIALS AND METHODS

This chapter comprises eight sections. The first section deals with the study design, the second section describes the study area, the third section puts special emphasis on the overview of the target population, which emphasizes definition, classification of manufacturing industries, demographic characteristics of the target population and others. The fourth section focuses on the method of data collection, the fifth section deals with sample size and sampling technique, the sixth section focuses on the data processing and analysis techniques , the seventh section puts forward specification of econometric model and the eighth section provides the operational definition of variables

## 3.1 STUDY DESIGN

This study is undertaken in Mekelle zone, Tigray region. The zone has 508 manufacturing companies project in different sectors who have acquired investment license from Tigray Trade and Industry Bureau, out of these 111 are in operation 157 are at implementation stage and the remaining 240 are at pre-implementation stage. Manufacturing companies are selected for the study purposively, because manufacturing companies have an ability to create employment, enhance the industrialization of a country through technology transfer and innovation, so that studying their financial structure is essential to analyze the financial structure decisions made by the companies and its influencing factors. The study is conducted with reference to selected private limited manufacturing companies which have been selected using predetermined criteria. The selection of the companies using criteria helped the researcher to consider companies who have operated for a long period and adequate financial data are selected to run the regression model.

Five Private limited manufacturing companies are selected and considered for the study out of the total 25 private limited manufacturing companies. Sufficient and valid research instruments were designed to collect the necessary primary and secondary data and competent analysis tools have been employed to analyze the collected data.

## 3.2 DESCRIPTION OF THE STUDY AREA

Mekelle is found 2000-2200 Meters high above sea level. Its average annual rainfall size is 50-250mm and has a daily average temperature of 19$^{o}$c. presently; its total land size is 53 km$^{2}$. It is 780kms far from Addis Ababa. In 2000 E.C, the number of population in Mekelle City is estimated to be 200,000 of which 51.4% were females and 48.6% were males. According to the statistics of BOFED, the dwellers of the city are followers of different religions which constitute 90.8% are Orthodox, 7.7% Muslims and 1.5% other religions (BOFED, 2009).

The Special Zone of Mekelle has been divided into two administrative Woredas (Northern and Southern Woreda) and further subdivided into 20 Tabias and 7 sub city administrations. Note, Tibia refers to the smallest administration unit (usually equivalent to Kebele), sub city refers to a combination of tabias, while woreda is the largest administration unit next to sub city. And incorporated the nearby two towns-Quiha and Aynalem, with Mekelle Special Zone (BOFED, 2009). Existing investment opportunities in Mekelle include textile manufacturing and such other agribusinesses as leather, dairy, processed foods, fertilizer, refractory bricks, lime production and sheet glass; other promising sectors include cultural, religious and eco-tourism, horticulture, apiculture and concentrated solar thermal energy production (USITC, 2007).

## 3.3 OVER VIEW OF THE TARGET POPULATION

### 3.3.1 DEFINITION

**Private Limited Company**: According to the Commercial Code of Ethiopia (1960), it is defined as a company whose partners are liable only to the extent of their contributions. The owners would be two of minimum and a maximum of fifty individuals.

**Manufacturing** is a trade based on the fabrication, Processing or preparation of products from raw materials and commodities. This includes all foods, chemicals, textiles, machines, and equipment; all refined metals and minerals derived from extracted ores; all lumber, wood, and pulp products, etc (BOTI, 2010).

**Manufacturing industries** are industries which produce goods by utilizing or processing raw materials, semi-processed materials, by- products or waste products or any other goods (BOTI, 2010).

### 3.3.2 Classification of Manufacturing Industries

As per the Tigray BOTI (2010), Manufacturing industries have the following sector classification in the context of Ethiopia, relaying on the direction developed by the Trade and Industry Minister of Ethiopia.

**1. Food, Beverages and Tobacco**

Food manufacturing includes the following sub sectors: Slathering, preparing and preserving of meat, manufacturing of dairy products etc Beverages include the distilling of ethyl alcohol mainly for alcoholic beverages; distilling, rectifying and blending of sprits etc. The tobacco sector includes the manufacturing of cigarettes, cigars, tobacco and tobacco Products.

**2. Textiles, Clothing, Leather and Footwear**

The textiles sector includes the spinning, weaving and finishing of textiles; the manufacture of made-up textile goods etc. Clothing on the other hand consists of the manufacturing of clothing by cutting and sewing fabrics, leather, fur, plastic, rubber and other materials. The leather sector includes tanneries and leather finishing. The foot

wear sector includes the manufacturing of leggings, gaiters and footwear from leather, fabrics and other materials.

**3. Wood and Wooden Products, Excluding Furniture**

Included in this sector are sawmills, planning and other wood mills manufacturing goods such as lumber, wooden building material, plywood, hard board, wooden containers, cane products, wooden products such as ladders, and picture frames etc.

**4. Paper and Paper Products**

This sector comprises the manufacturing of pulp, paperboard, light packaging (paper bags and boxes), heavy packaging (paper sacks, corrugated containers), stationery and other paper products.

**5. Chemicals, Petroleum, Rubber and Plastics**

The chemicals sector comprises the manufacture of: basic industrial chemicals such as dyes, organic pigments, solvents, polyhydric alcohols etc. The petroleum sector includes petroleum refineries producing petrol, fuel oils, lubricating oils and greases etc. Rubber products include the manufacturing of tires and tubes from natural of synthetic rubber for motorcars trucks, aircraft, tractors and other equipment. The plastic products sector includes the manufacturing of products by a process of extruding of molding resigns of plastic raw materials.

**6. Non Metallic Mineral Products**

The following sub-sectors are classified under non-metallic mineral products: the manufacturing of pottery and earth ware (e.g. table and kitchen articles for preparing, serving or storing food, the manufacture of glass and glassware products and other products as bricks, tiles cement, concrete, gypsum and plaster products.

**7. Basic Metal Products**

This sector comprises the following two sub sectors: Development of Managerial Performance and Measurement Database with Proposed Solution. The manufacturing of basic iron and steel products include all the processes from melting in blast furnaces to the semi final stage in rolling mills and foundries.

**8. Fabricated Metal Products and Machinery and Equipment**

This sector comprises the manufacturing of cutlery, hand tools and general hardware such as table, kitchen and other cutlery, axes, chisels, files, Structural metal products such as structural components for bridges and buildings; doors, metal staircases and window frames; The manufacture of engines and turbines; Agricultural machinery and equipment; metal- working and wood- working machinery, etc.

**9. Other Manufacturing Industries**

This sector covers the manufacturing of all other products not included in the above sectors, such as jewellery and related articles, furniture manufacture, professional, photographic and optical goods, watches etc.

### 3.3.3 DEMOGRAPHIC CHARACTERISTICS

This section emphasizes the demographic characteristic of the target population, providing a highlight about the manufacturing companies in Mekelle, proceeding to the Private limited companies in Mekelle and stressing special attention to Manufacturing PLC and the sectoral classification of companies under study.

#### 3.3.3.1 Manufacturing Companies in Mekelle

There are 508 manufacturing industry projects in Mekelle the status of the projects can be summarized as follows:-

**Table 3.1 Manufacturing projects in Mekelle**

| S. No. | Stage of the project | No. of projects | Total planned capital | Proposed Employment | |
|---|---|---|---|---|---|
| | | | | Permanent | Temporary |
| 1 | Operation | 111 | 764928802 | 2295 | 265 |
| 2 | Implementation | 157 | 1270649984 | 2772 | 684 |
| 3 | Pre implementation | 240 | 925400473 | 3523 | 2005 |

**Source**: *Investment Promotion Core Process, Tigray Region, Mekelle* (BOTI, *2010)*.

The manufacturing companies which are in operation totals 111. They can be summarized as follows on the basis of their year of establishment.

**Table 3.2 Year of establishment of the Projects in operation**

| S. No. | Year of establishment | | Number of projects |
|---|---|---|---|
| | From | To | |
| 1 | 1985 E.C | 1990 E.C | 35 |
| 2 | 1991 E.C | 1995 E.C | 24 |
| 3 | 1996 E.C | 2001 E.C | 53 |
| | | Total | 111 |

**Source**: *Investment Promotion Core Process, Tigrai Region, Mekelle* (BOTI, *2010)*.

Out of the above 111 Projects in operation only private limited manufacturing companies which are 25 in number have been considered for the study and companies that are established prior to 1996 E.C, have only been considered for the study.

### 3.3.3.2 Distribution of Private Limited companies in Mekelle

Table 3.3 shows distribution of Private limited companies in Mekelle through outlining their respective industry and the number of companies under operation.

**Table 3.3 Number of private limited companies in Mekelle**

| **S.No** | **Type of Industry** | **No. of Companies** |
|---|---|---|
| 1 | Manufacturing | 25 |
| 2 | General Trade | 49 |
| 3 | Service | 39 |
| 4 | Construction | 6 |
| 5 | Others | 10 |
| | Total | **129** |

**Source**: (ERCA, 2010)

### 3.3.3.3. Sectoral classification of Companies under study

The sectoral classification of companies under study is indicated in Table 3.4. Out of the total 25 private limited manufacturing companies operating in Mekelle, only 5 companies considered for the study, which have fulfilled the predetermined criteria of selection. Here under is shown the distribution of the companies according to types of manufacturing sector.

**Table 3.4 Sector classification of the companies under study**

| S. No. | Name of the Company | Type of sector | Location | Year of Establishment |
|---|---|---|---|---|
| 1 | Mesobo Building Materials Factory | Cement and cement product | Mekelle, | 2001 |
| 2 | Dalul Gravel and Cement Products Factory | Cement and cement products | Quiha | 1998 |
| 3 | Delo Gravel and Cement Products Factory | Cement and cement products | Mekelle | 1997 |
| 4 | Mesfin Industrial Engineering | Industrial engineering | Mekelle | 2003 |
| 5 | Desta Alcohol and Liquors Factory | Beverage and alcohol | Mekelle | 1998 |

**Source:** (ERCA, 2010)

## 3.4 METHOD OF DATA COLLECTION

For the purpose of this study, both primary and secondary as well as both qualitative and quantitative data were used. The primary data were collected from the general finance manager of the companies using questionnaire with open ended and closed ended questions. The secondary data which are the significant source for this research were collected from Ethiopian Revenue and Custom Bureau, Mekelle branch by reviewing and observing financial statements (balance sheet and income statements)

and reports (financial and operational performance) of the companies. External sources such as books, journals and magazines were also used to support the results of the findings with empirical studies and theoretical back ground of the study.

## 3.5 SAMPLING DESIGN AND SAMPLE SIZE

For the purpose of this study, Population has been defined in terms of private limited manufacturing companies operating in Mekelle Zone. The sample for the study is determined based on a criteria year of establishment and maintenance of adequate accounting reports. Manufacturing companies established prior to 1996 E.C and which have adequate financial statement in the data base of Ethiopian Revenue and Custom Authority, are included in the sample frame. Out of the total twenty five private limited manufacturing companies operating in Mekelle zone five were selected purposively(see Table 3.4). The sample size includes only these five selected companies. All of the selected companies were considered for the study. This helped the researcher to analyze the financial structure of the companies for six years. Finance managers of the selected companies are selected to distribute a questionnaire using non probability sampling called purposive sampling, in which the finance managers are assumed to have a better knowledge about the company than other employees to explain the challenges the company is facing and the financial decisions made by the company.

## 3.6 DATA PROCESSING PROCEDURES AND DATA ANALYSIS

### 3.6.1. DATA PROCESSING PROCEDURES

The data were processed using a computer. Coding was made for each completed data in order to label response categories and tabulation was made to summarize and classify the collected data. STATA computer software application package was used to process and evaluate the collected data.

### 3.6.2 METHOD OF DATA ANALYSIS

The collected data were analyzed using descriptive statistics such as tables, percentages, averages and standard deviation. OLS Multiple regression analysis, correlation analysis and financial ratio analysis were also used to analyze the financial structure of the companies. As a result conclusions are drawn with regard to how companies finance their assets, the financial decision made and the relationship of the firm characteristics with leverage with special emphasis to the selected companies.

## 3.7 SPECIFICATION OF THE MODEL

In order to run the further analysis towards variables proposed as mentioned below, the study combines Pooled cross-sectional time series data and the model developed to test the relationship of the independent and dependent variables can be specified as follows:-

$$DR_{i,t} = \beta_0 + \beta_1 SIZE_{i,t} + \beta_2 SOA_{i,t} + \beta_3 AVPROF_{i,t} + \beta_4 GROWTH_{i,t} + \beta_5 LIQ_{i,t} + \beta_6 COMPDUMMY_{i,t} + \varepsilon_{i,t}$$

$$CLR_{i,t} = \beta_0 + \beta_1 SIZE_{i,t} + \beta_2 SOA_{i,t} + \beta_3 AVPROF_{i,t} + \beta_4 GROWTH_{i,t} + \beta_5 LIQ_{i,t} + \beta_6 COMPDUMMY_{i,t} + \varepsilon_{i,t}$$

$$LDR_{i,t} = \beta_0 + \beta_1 SIZE_{i,t} + \beta_2 SOA_{i,t} + \beta_3 AVPROF_{i,t} + \beta_4 GROWTH_{i,t} + \beta_5 LIQ_{i,t} + \beta_6 COMPDUMMY_{i,t} + \varepsilon_{i,t}$$

WHERE: **DR, CLR and LDR$_{i,t}$** = the Total debt, current liability and long term debt ratios of the Company i at time t

**SIZE$_{i,t}$** = the Size of the Company i at time t

**SOA$_{i,t}$** = the Structure of Asset of the Company i at time t

**AVPROF$_{i,t}$** = the Average Profit of the Company i at time t

**Growth, t** = the growth of the company i at time t

**LIQ$_{i,t}$** = the Quick Ratio of the Company i at time t

**COMPDUMMY$_{i,t}$** = Company Dummy refers to difference in leverage ratio of the companies, where 1 if the company have > 30% total debt ratio at t time and 0 if the company has < 30% leverage.

$\varepsilon_{i,t}$ = the error term and $\beta_0$ = is the constant term of the model

## 3.8. OPERATIONAL DEFINITION OF VARIABLES

The variables selected and used to test the determinants of financial structure are explained as follows:-

### 3.8.1. DEPNDENT VARIABLES:

The researcher has established three dependent variables: Debt ratio, Current liability ratio and Long term debt ratio to examine how the identified independent variables affect the financial leverage. Do their effect similar in all of the financial leverage ratios or not.

**1. Debt to Asset Ratio:** companies use both short-term and long-term debt in financing their fixed and current assets. Total debt contains both long-term and short-term liabilities. Total debt to asset ratio is defined as the ratio of total debt to total assets. It is given by:

$$\text{Debt/Asset} = \frac{\text{Total Debt i,t}}{\text{Total Assets i,t}}$$

A high percentage means that the company is too dependent on the leverage to finance its activity while low percentage represents the reverse implication. In general, the higher the ratio, the riskier the company position to be in default payment and subject to face financial distress and eventually bankruptcy.

**2. Current liability Ratio (CLR):** it is defined as the ratio of the total current liability to total assets. It is given by:

$$\text{Current liability ratio} = \frac{\text{Total current liability i,t}}{\text{Total assets i,t}}$$

Current liability includes all obligations that mature within one year. This includes bank over draft, trade payables, accrued payables and others

**3. Long term Debt Ratio:** it is defined as the ratio of total long term liability to total asset. For the purpose of this study, long term debt is defined as debts which have a maturity life of more than one year. It is given by:

$$\text{Long term debt ratio} = \frac{\text{Total long term liability i, t}}{\text{Total assets i, t}}$$

### 3.8.2. INDEPENDENT VARIABLES

1. **Size:** it is defined as the natural logarithm of total assets held by a company i,t, where total assets are measured using the sum of current assets and long term assets held by a business as it is shown in the balance sheet on its historical cost. It is calculated by:

**Size =** log (total assets i, t) where: i refer to company and t refers to respective time or period.

Leverage increases with size because larger firms are better diversified in terms of risk and gain better profitability compared to smaller firms. Larger firms are less likely to face possibility of financial distress and have lower expected bankruptcy costs.

2. **Liquidity:** It is defined as the ability of a company to pay its short term obligations and contingencies. It is measured using a quick ratio, where Quick ratio is given by:

$$\textbf{Quick ratio} = \frac{\text{Current Assets- Inventories}}{\text{Current Liability}}$$

The higher the ratios will indicate better position of liquidity a company has. High liquidity ensures that the firm can meet its short-term obligation. Liquidity of the firm is indicated by the short-term debt coverage. Thus, the study considered the relationship between the liquidity of the firm and its financial structure.

3. **Structure of Asset:** It is defined as the composition of assets held by the company. The proportion of current assets and fixed assets determines the structure of the asset of a company. For the purpose of this study, structure of asset of the company i, t, is measured using the proportion of fixed assets to total assets. It is given by:

$$\textbf{Asset Structure} = \frac{\text{Total Fixed Assets}}{\text{Total Assets}}$$

The higher the assets structure ratio indicates the company's ability to borrow more, as a result of the higher security assets it held. It shows the company has higher collateral ability.

4. **Profitability:** It is defined as an Average of the net income/loss earned by the company i,t (return on assets) after payment of its interest and taxes. It is measured

using two years net income earned by the company divided by total assets. Two years period is taken, to make the net income more representative. It is given by:

$$\textbf{Average Profit} = \frac{NI_{t-1} + NI_t}{2}$$

$$\text{Average profit ratio (ROA)} = \frac{\text{Average Profit}}{\text{Total Assets}}$$

NI refers to Net income of the Company. And t refers to time period and t-1 is the one lag time period.

5. **Growth:** it is defined as increments in total capacity of the company i,t. It is measured using the change in annual net sales earned by a company. it is given by:

$$\textbf{Growth} = \frac{\text{Annual net sales } t - \text{Annual net sales } t\text{-}1}{\text{Annual net sales } t\text{-}1}$$

6. **Company Dummy**: Company Dummy is used to see the difference in leverage ratio between companies under study. 1 is given to companies who have more than 30% of total debt ratio at time t and 0 is given to companies who have less than 30% of total debt ratio at time t.

# CHAPTER FOUR
# ANALYSIS AND DISCUSSION

This chapter details the analysis and discussion of the collected data. Both descriptive statistics and econometric analysis were made. Data collected from questionnaire and secondary data sources such as financial statements are analyzed as follows:

## 4.1 DESCRIPTIVE ANALYSIS

### 4.1.1 ANALYSIS ON THE FINDINGS OF PRIMARY DATA

Both Primary and secondary data were used to conduct this research. Primary data were collected through a structured questionnaire with open ended and closed ended questions. The questionnaire was distributed to 5 Finance managers of private limited manufacturing companies operating in Mekelle zone. Questionnaire was selected as better instrument than interview schedule is that due to the volume of the questions. The finance managers might be reluctant to provide more time to conduct the personal face to face interview. All distributed questionnaires have been collected and adequate clarifications and explanations have also been provided by the researcher upon situations questions raised by the respondents.

The content of the questionnaire shows two categories; the first is related to financial decision and financing patterns of the companies and the second category includes questions regarding to the environment of the companies. It has included 38 questions. The questionnaire is attached at the end under Annex- A. Analysis of the data is shown below as follows:

#### 4.1.1.1 SOURCES AND TYPES OF FINANCIAL RESOURCES

Credit to the private sector is used to measure financial development, but less attention has been paid by the firms to the type of credit they use (Cornelia , 2008; Laurent ,2001; Merton and Bodie, 1995; Myers ,1977; Pagano,1993; Thorsten and Levine, 2000). The lack of long-term credit is often seen as the main impediment to private sector

development in developing countries, especially in Africa. To assess the sources and types of finance used by the manufacturing PLC, the survey resulted that, for all the companies (100%) under study, banks are the major sources of finance. Especially private banks take the major role, except for Mesobo and Mesfin, where Government banks also finance the activities of the companies. The reason behind the highest contribution of the private banks is that, private banks need to increase their market share, they are striving to satisfy the needs of the customers and their lending procedures are flexible.

With regard to the types of financial resources, the companies are accessing and using for their operation, the respondents were asked to rank the different sources of finance as most and easily accessible to least accessible. Based on the survey, the respondents have ranked their preference as can be seen below in table 4.1.

**Table 4.1 Responses for types of financial resources used by the Companies**

| **Types of Finance** | **Rank* by the respondents** | | | |
|---|---|---|---|---|
| | **1** | **2** | **3** | **4** |
| Debt | 60% | 40% | 0 | 0 |
| Equity | 20% | 0 | 20% | 0 |
| Operational credit | 20% | 60% | 20% | 0 |
| Informal credit | 0 | 0 | 0 | 20% |

**Source**: *Computed and summarized from the questionnaire*

Note: Where rank shows that 4= least accessible 3= less accessible 2= better accessible 1= easily and most accessible

As it can be seen from Table 4.1, most of the companies prefer Debt type of finance where 60% of the respondents have ranked debt as the first priority and only one company(20%) of the companies under study preferred equity as their first priority and the remaining 20% has preferred operational credit as their first preference. Except the one company who has preferred equity as its first preference and the one company who has ranked equity as its third preference, the remaining companies (60%) have not given rank to equity. Their reason may be they are not public enterprises, they do not sale

shares, as a result their access to equity is imminent, as private limited companies, and the contribution by the private shareholders is minimal.

Those companies(60%) who have preferred first priority to debt, have also preferred trade credit as their second preference, excluding the ranking of others(equity and informal credit) and only one company has ranked informal credit as one of its alternative source of finance, where the remaining 4 companies(80%) have not given any rank to informal credit. Their reason is that the size of informal credit is small and because of their size and business opportunities, they are able to get guarantee for accessing formal credit from financial institutions.

### 4.1.1.2 FINANCING FIRM'S ACTIVITIES

During the survey, many questions have been raised with regard to financing activities of the companies. The response of the respondents as how the companies finance their activity is summarized as follows in the table shown below.

**Table 4.2 Response of respondents for financing company's activities**

| S.No | Types of Finance | Activities to be financed | | |
|---|---|---|---|---|
| | | **Working capital** | **Fixed assets** | **Projects** |
| 1 | Short term loan | 40% | 40% | 20% |
| 2 | Long term Loan | 20% | 0 | 40% |
| 3 | Operational Credit | 20% | 0 | 0 |
| 4 | Equity | 0 | 0 | 0 |
| 5 | Retained earnings | 0 | 0 | 0 |
| 6 | Leasing | 0 | 20% | 0 |
| 7 | A Combination of 1 &2 | 0 | 20% | 20% |
| 8 | A Combination of 1,2&5 | 20% | 0 | 0 |
| 9 | A Combination of 1,2&6 | 0 | 20% | 0 |
| 10 | A Combination of 2 &4 | 0 | 0 | 20% |

**Source**: *Summarized and computed from questionnaire*

40% of the companies use to finance their working capital through short term bank loans, 20% uses long term loan, 20% uses operational credit and the remaining 20% of the companies use a combination of short term, long term and retained earnings as sources of finance for working capital.

40% of the companies finance their fixed assets through short term loans, 20% uses leasing to finance fixed assets, 20% uses a combination of short term and long term loans and the remaining 20% uses a combination of short term loan, long term loan and leasing to finance their fixed assets. 40% of the companies use long term loans for financing projects, 20% uses short term loans, 20% uses a combination of short term and long term loans and the remaining 20% uses a combination of long term loan and equity.

The study indicated that most of the companies rely on short term loans to finance their working capital and fixed assets, except for financing projects, in which the companies rely on long term loans. This is due to the fact that companies use bank over drafts as their significant external source for financing their activities. For the better advantage and to match the life of the asset with the maturity of the loan, long term loans ,equity and leasing are the better financing mechanisms for fixed assets and project financing, because short- and long-term credit may have different impacts on output production because they do not serve the same purpose.

From findings of the survey it has been seen that equity is the most inaccessible and leasing is also not known as an alternative source of finance. 20% of the companies use leasing as an alternative source of finance. The remaining 80% do not use lease finance. The reason forwarded is due to inadequate knowledge of lease financing, lack of adequate lease financing company and due to the assumption that lease financing is costly. The survey revealed as to how the companies finance emergencies if any: 20%

use own capital and the remaining 80% use loans (both short term and long term) to finance their emergency needs.

#### 4.1.1.3 FINANCIAL DECISIONS

Prudent and well planned financial decisions will create wealth and increase the value of the company. A question was raised to respondents with regard to the general financing strategy the companies employ. 80% have responded that their strategy is debt driven, while the remaining 20% is operational credit driven.

The companies make their financial decision through their budgeted financial statements. Accordingly, they identify different sources of finance to finance their future operations. As it has been explained, 80% of the companies are debt driven, their rationale is, internal source is not sufficient, so that they will search for other sources, in which debt is the most and easily accessible by the companies. Adequate finance is essential to meet the financial needs of the company; as a result it can be used for creating wealth and value. With regard to the adequacy of the size of finance, whether it satisfy the amount required or not, 60% of the respondents said that the size of the finance is average,20% responded that it is inadequate and the remaining 20% reflected that it is adequate. Those who have responded the size of the finance is average and inadequate said that banks require more collateral in which loans will be borrowed only 50-74% of their collateral value. This actually make them go for other sources of finance (as per their preference) to finance the difference between required size and size of the accessible finance.

The awareness of the companies on the advantage of tax shield through debt financing and its advantage on firm's profitability is also assessed. 40% of the respondents have an understanding about tax shield advantage. As a result, though the financial charges can also reduce the net income, if internal sources are not sufficient, they access to bank to borrow loan. The remaining 60% of the companies do not have an understanding on the advantage of the tax shield. They only go for external source of finance (debt and operational credit) whichever is easily accessible, when internal source is not sufficient.

Their financial decision of these companies does not consider the advantage of tax shield.

#### 4.1.1.4 PROBLEMS AND CONSTRAINTS THE PRIVATE LIMITED MANUFACTURING COMPANIES ARE FACING

Defining access to finance is not an easy task. Generally, access to finance commonly refers to the availability of supply of quality financial services at reasonable costs. However, depending on what one considers 'quality' services and 'reasonable' costs, the measurement of access to finance needs to be altered by different factors.

When a company has a good market, it is known that it will increase its sales, as a result it will generate higher profit which in turn leads the company to retain more part of the profit, hence, the company's need of external finance will decrease. Having this theoretical base, a question have been raised with regard to either the companies have faced market problem during the years under study. 80% of the companies have responded that, they have faced market problem and the remaining 20% of the companies have not faced any market problem, in turn they have not seen any effect on their financial structure. Those who have faced market problems; they showed that their financial structure resulted to increase leverage.

As sales of the companies have decreased, internal sources of finance were minimal; their reason for cut of sales is due to lack of raw material, electricity rationing and the high production cost in Mekelle than other areas, where this leads to lack the companies' competitive advantage in the countries market.

To see internal constraints of the company, a question has been raised with regard to whether the companies have internal problems that limit the company to access finance.100% of the companies have responded that there are no any internal problems, rather employee composition, management and employee commitment, organizational structure are the key strengths of the companies, as a result there is no any situation in which leverage is affected as a result of internal problem. Another point that can constrain the companies from accessing to finance is the nature and size of the collateral. Size of the collateral requirement is found to be significant. 80% of the companies

responded that collateral requirements are more than 100% and the size of the loan accessed is 50-74% of the collateral value and the remaining 20% have responded that they are able to access 100% of the collateral as loan. Those companies who have responded that collateral is a constraint, they have reflected that the collateral or pledging is inefficient and the loans accessed are low, in turn, the assets will not generate cash, which result in poor fixed asset turn over.

The procedures and requirements for borrowing loan should be friendly with the companies and symmetric information should be disclosed, as a result the convenience of the procedures and requirements for accessing finance will be positive. 80% of the companies under study responded that the requirements and procedures are convenient for their company to access finance and the remaining 20% has responded that the requirements and procedures are inconvenient for their company. The forwarded reason for this were higher interest rate, high collateral requirement and lack of consultancy by lending institutions, where they only focus on the amount of loans disbursed and the monthly installment payments.

The existence of corruption in any activity hurdle the economic development and discourage investors to invest their economic resources. Corruption in financial institutions will severely also affect the capacity of firms to increase their capital, as it will discourage the companies to access financial institutions. From the survey 60% have said that there is no problem of corruption and remaining 40% have responded that there is a problem of corruption; where this has affected their financial structure decision. The reason they forwarded is that it is difficult to find finance, even there is good service, unless you push the grains. As a result the companies are incurring unnecessary cost in which this results the company in lower profit, so that the companies search for additional external sources of finance. From the survey the financial obstacles faced by the companies are: there are limited financial intermediaries as a result there is less competition, underestimation of fixed assets(higher collateral requirement), strict regulation of National Bank , unequal treatment of companies

during financing have been forwarded as the general obstacles that are constraining the companies to access finance.

#### 4.1.1.5 LEGAL ENVIRONMENT OF THE COMPANIES

Conducive legal environment is essential for any company to operate properly and safeguard its interests and achieve the objectives of the company. Maintaining a stable macroeconomic environment, strengthening the legal protections for creditors and effectively applying the laws, enhancing the effectiveness of banking regulation stimulate access to credit.

To assess the legal environment of accessing finance, questions have been raised as how the companies evaluate the financial policy of the country. 60% of the respondents responded that the financial policy of the country is moderate, 20% have said that the financial policy is restrictive and 20% have been reluctant to respond to the question. In addition, another question has also been raised with regard to the convenience of the bank rules and regulations. 80% have responded that the bank rules and regulations are convenient to their company and the remaining 20% have responded that, the bank rules and regulations are inconvenient to their company, in which the rules and regulations are restrictive and it does not take into consideration the interest of customers also. The bank rules and regulations is susceptible to corruption, as a result this leads to constraint the companies in accessing finance. The convenience of legal environment to their company have been shown as 40% companies responded that the legal environment is convenient to their company, 40% were reluctant to provide their response and the remaining 20% responded that the legal environment is not convenient to their company. A reason forwarded for this is there is unequal treatment of investors (companies), lack of advisory and consultancy service when dispute arises.

#### 4.1.1.6 THE ECONOMIC ENVIRONMENT

Friendly economic environment is essential for companies to operate properly. The economic policies, the financial services and financial institution should properly support the activities of the companies. To assess how the economic environment is

affecting the private limited company under study, various questions have been raised. The effect of inflation on the companies' financial structure for the periods under study was assessed, so that 60% of the companies have responded that their leverage is increased during the inflation period and the remaining 40% their leverage is decreased as a result of inflation because government has made restrictions on borrowings.

Those companies, whose leverage is increased, reasoned out that as a result of the inflation, price of inputs or raw materials have been increased, as a result the companies required additional finance, where this has increased the leverage of the companies. Those whose leverage is decreased as a result of the inflation, they used to finance their financial requirements using own capital, contribution from sister companies and operational credit.

Factors such as, taxes, bankruptcy costs, agency costs, proxy effects and asymmetric information are important factors that have a role in the relation between firm value and financing decision. The reduction of marginal tax rate is expected to have a positive effect on business financing and leverage (Myres, 1988). From the survey, 40% of the companies have responded that the effect of different taxes levied on the company leads to increase the leverage of the companies and 40% responded that the effect of different taxes levied on the company leads to decrease the leverage of the company and the remaining 20% have responded that they have no any effect on the leverage of the company.

It is known that as taxes increases the amount of net income decreases, as a result the retained earnings will also decrease, which in turn causes the company to search for external source of finance which leads to increase leverage. According to different literature, the financial development of a financial system depends on the quality of the services and quantity of the financial products provided by financial intermediaries. From the survey it has been explored that 60% of the companies responded that the financial services provided are good, 20% reflected the services are very good and 20% have reflected that the services provided are satisfactory. And the quantity of the financial products the companies are accessing is assessed. As a result, 60% have

responded that the financial products are limited, 20% have reflected that the financial products are very limited and the remaining 20% responded that the financial products are various.

### 4.1.1.7 GOVERNMENT INCENTIVES AND SUPPORT.

Government incentives and support will encourage both domestic and foreign investment. Incentives range from providing tax holidays, incentives, access to land, consultancy, etc.

A question has been raised with regard to the government support to solve market problems in which the companies face. 60% of the respondents were reluctant to answer the question, because they do not expect the support of government on marketing, 20% have responded that government support is good and the remaining 20% have responded that the government support is poor. They have reasoned out that government lacks in supporting the company through disclosing market information and linking the companies to market.

## 4.1.2 DESCRIPTIVE ANALYSIS ON SECONDARY DATA

**Table 4.3: Mean of Variables of the Companies under study, 2004-2009**
**Balanced data: time period per firm=6 and Total firms per year observation=30**

| Company | Variables | | | | |
|---|---|---|---|---|---|
| | **Size** | **Profitability** | **Liquidity** | **SOA** | **Growth** |
| **Mesobo** | 9.08 | 0.17 | 2.07 | 0.51 | 0.42 |
| **Mesfin** | 8.39 | 0.014 | 2.48 | 0.20 | 0.21 |
| **Desta** | 7.31 | 0.10 | 1.07 | 0.50 | 0.34 |
| **Dalul** | 7.25 | 0.02 | 0.52 | 0.64 | 0.30 |
| **Delo** | 6.39 | -0.032 | 0.60 | 0.37 | 0.26 |

**Source:** *Own compilation from secondary data*

Mesobo took the highest rank for size (log of assets), accounted for 9.08, profitability (17%), and growth (42%) which is higher than the remaining companies under study except for its Structure of asset (asset tangibility) and liquidity. Its profitability 17% shows an average profit (return on assets) during the periods under study. Delo is the least profitable (-3.2%) and have the least size (6.39). Mesfin recorded the highest liquidity (2.48), least tangibility of asset (20%), and its growth rate shows least rank among the companies under study. So both Mesebo and Desta, as they are earning higher profit on average, they are able to retain part of their profit better than other companies. As a result they were able to meet their short term obligation easily.

**Table 4.4 How Manufacturing PLC finance their assets**
**(Data accumulated 2004-2009)**

| Year | Average(Mean) | | | | Standard deviation | | | |
|---|---|---|---|---|---|---|---|---|
| | EQ/TA (%) | TD/TA (%) | CL/TA (%) | LD/TA (%) | EQ/TA (%) | TD/TA (%) | CL/TA (% | LD/TA (%) |
| **2004** | 48.80 | 50.20 | 15.24 | 34.80 | 42 | 42 | 11 | 41 |
| **2005** | 38.40 | 61.60 | 18.24 | 43.40 | 37 | 39 | 9 | 34 |
| **2006** | 43.70 | 56.30 | 25.06 | 31.24 | 28 | 28 | 13 | 30 |
| **2007** | 48.82 | 51.18 | 29.46 | 21.72 | 21 | 21 | 14 | 12 |
| **2008** | 48.80 | 51.12 | 34.18 | 16.94 | 18 | 18 | 22 | 19 |
| **2009** | 57.26 | 42.74 | 20.80 | 21.94 | 16 | 16 | 10 | 15 |

**Note: EQ**=equity**, TA**= total assets, **TD**= total debt, **CL**= Current liability, **LD**= Long term liability
**Source:** *Own compilation from secondary data*

According to Table 4.4, in 2004 the majority companies under study were financed through Debt, (50.2%) of which long term debt took the highest proportion (34.8%), where the deviation among the companies in both equity and debt was higher (42%). It also shows that there is higher difference among the companies in long term debt proportion which accounts for 41% deviation from the average long term debt ratio. This is due to a reason that higher long term debt ratio difference between Mesebo which had higher debt ratio (100%) and Dalul, Mesfin and Desta which had lower debt ratio (0%). But there is less deviation in short term debt ratio of each company from the

average ratio in this period. The year to year equity ratio is increasing from 38.4% in 2005 to 57.26% in 2009. This shows that the companies are creating value, in which they are able to retain part of their profit, as a result they are able to finance their assets with majority of equity (57.26%) in 2009. During the previous periods their dominant source of finance was debt, which is 61.6% in 2005, 56.3% in 2006, 51.18% in 2007, 51.12% in 2008 and 42.74% in 2009, which shows a declining trend and similarly the companies' equity and total debt ratios in the periods under study shows a declining deviation from the respective periods average ratios.

Except for the periods 2007 and 2008 in which current liability accounted for higher proportion of the total debt 29.46%and 34.18%, respectively the remaining periods show for highest proportion of long term debt. The deviation in current liability of the companies was higher in 2008 which accounted for 22% deviation from the period's average current liability ratio, but for remaining periods there was small deviation which is almost similar.

**Table 4.5 Companies Financing Pattern**

| Company | Average(mean) | | | | Standard deviation | | | |
|---|---|---|---|---|---|---|---|---|
| | EQ/TA (%) | TD/TA (%) | CL/TA (%) | LD/TA (%) | EQ/TA (%) | TD/TA (%) | CL/TA (%) | LD/TA (%) |
| **MESFIN** | 79 | 21 | 19.4 | 1.6 | 5 | 7 | 6 | 1.4 |
| **MESEBO** | 23 | 77 | 18 | 59 | 33 | 33 | 7 | 36 |
| **DESTA** | 60.2 | 39.8 | 10.6 | 29.2 | 4.9 | 4.9 | 7 | 2.8 |
| **DALUL** | 45.3 | 54.7 | 37.5 | 26.8 | 27 | 27 | 21 | 22 |
| **DELO** | 39.7 | 60.3 | 33.01 | 27.3 | 8 | 8.4 | 4 | 11 |

**Note: EQ**=equity, A= total assets, **TD**= total debt, **CL**= Current liability, **LD**= Long term liability
**Source:** Own compilation from secondary data

Table 4.4 indicates the periodic financing patterns of the companies, that is, which type of finance the firms have used as a major source of finance. The companies on average have relied on internal source of finance for financing assets confirming the pecking order theory, and then only if internal source is not sufficient, they searched for external

finance which is debt, where long term debt accounted for major proportion. But this result may have been influenced by the highly leveraged firm (Mesobo) in which it has accounted for 77% average total debt ratio for the periods under study.

The above comparison can only show the periodic average equity and debt ratio for the manufacturing PLC under study, so it shows the period's under study average ratios. But to see company differences and company financing patterns, Table 4.5 gives emphasis on company's Equity and debt ratios which is averaged for periods under study.

As it can be seen from Table 4.5, Mesfin is highly equity financed (79%) and Mesobo averagely used equity 23% to finance its asset in which Mesobo is highly leveraged on average it has accounted for 77% debt. Desta (60.2%), Dalul (45.3%) and Delo (39.7%) fellow the next ranks respectively after Mesfin in using equity as a major source of finance to finance their assets. Conversely, Mesfin rely on total debt only 21% which is ranked the list among the companies under study, where Mesobo (77%), Delo (60.3%), Dalul (54.7%) and Desta (39.8%), showed the total debt ratio after Mesfin. we can observe that all firms except Messobo and Desta, they use short term source of finance as a major source to finance their asset. The current liability ratio is higher than the long term liability in all the firms except Messobo and Desta. This shows that the total assets are financed by significant short term sources of finance. Among the observed firms Messobo and Mesfin have the highest leverage and lowest leverage respectively. Messobo, Dalul and Delo, all of which are cement product producers, have the highest leverage than Mesfin and Desta. The reason behind for Mesfin to have the lowest Total debt ratio is that Mesfin is highly depending on its internal source of finance, in which it relies on it sales. Because Mesfin is producing capital goods, where it receives 30% advance upon order and the remaining balance upon delivery of the good, as a result, the firm will be less exposed to external source of finance; whereas Mesobo's higher debt ratio may be due to high expansion projects made by the company. The average structure of asset shows that Mesfin has 20% of the total asset as fixed assets which is the lowest of all the firms.

Because fixed assets are used as a collateral, this may have limited the firm to have lower leverage and Desta has the highest average Growth rate next to Mesobo, as a result it may has enabled the company to retain more profit that leads to minimize accessing to external sources of finance. And it may also be the problems in accessing finance have constrained the company to access debt finance, as it has been commented by the finance manager, i.e, the existence of corruption in banks which is considered a significant constraint for the firm to access to bank.

Except for Desta (10.6%), the remaining companies show for higher average current liability ratio, covering the highest proportion of total debt ratio. Mesobo accounted for highest current liability ratio (59%). Except Desta and Messobo, the remaining companies rely heavily on short term debt than long term debt (in which they have accounted for higher current liability proportion on the total debt). Mesfin had used on average only 1.6% long term debt to finance its assets, which is the lowest ratio among the companies. The deviation shown on the companies' equity and debt ratio can be summarized as, except for Mesobo and Dalul which had a deviation of 33% and 27% in their equity and debt for the periods under study, the remaining companies show for less deviation in their equity and debt ratio. Mesobo had a higher deviation in its long term debt and Dalul recorded higher deviations in all of the ratios. As for Dalul, the deviation may have been resulted as a result of the market fluctuations the company has faced according to the response of the respondent. Lack of raw material (cement) as a result of electric rationing resulted in cutoff sales of the firm during 2008 and 2009, so that this may have resulted to confirm higher deviation in its ratio.

Mesobo's higher deviation in the ratio may have been resulted as a result of its expansion projects which may have resulted to access additional debt from period to period and at the same time Mesobo had higher debt ratio in early periods, while later it has decreased it proportionally.

**Table 4.6 Short term debt components of the companies under study**

| Company | Average(Mean) | | | Standard deviation | |
|---|---|---|---|---|---|
| | BOD ratio (%) | A/p ratio (%) | Others (%) | BOD ratio (%) | A/p ratio (%) |
| MESFIN | 34.9 | 18.2 | 46.9 | 18 | 15 |
| MESOBO | 0 | 31.2 | 68.8 | 0 | 36 |
| DESTA | 12.9 | 44.2 | 42.9 | 13 | 37 |
| DALUL | 27.5 | 10.48 | 62.02 | 18 | 9.3 |
| DELO | 88.2 | 0.8 | 11 | 17 | 1.3 |

**Source:** *Own compilation from secondary data*

**Note: BOD ratio**= Bank overdraft/total current liability, **A/P ratio**= Account payable/total current liability and others= other current liability like accrued payables and payable to associates

Table 4.5, indicated that all companies, except Desta, rely on highest proportion of Current liability out of the total debt. This is due to a reason that financial institutions are reluctant to lend long term debt and long term debt is also borrowed through collateral, in which assets are under estimated. As a result, firms search for additional source of finance, where short term debt took the highest priority. So, the composition of the short term debt in the above table is analyzed as follows. Different literatures in financing strategies support that out of total debt accessing higher proportion of spontaneous sources of finance are essential, as they are cost free and accessed with less bureaucracy. As it can be seen from Table 4.6, Delo comprise for the highest bank over draft proportion out of its total short term debt and Mesobo does not have any bank overdraft facility.

Mesfin (34.9%), Dalul (27.5%) and Desta (12.9%) ranked after Delo to have the next higher proportion of bank over draft in their short term debt. Mesobo and Desta recorded for 31.2% and 44.2% account payable proportion in their short term debt. This shows that both these two companies better rely on Account payable than bank over draft. For all Companies except Delo which accounted for highest proportion of bank

over draft (88%) in its short term debt, the remaining companies show for highest proportion of other short term debts such as accruals, tax payable and payable to associates out of the total current liabilities. The companies' bank over draft component of the short term debt resulted in less deviation almost similar to all companies except for Desta (13%) deviation from the average Bank overdraft ratio. Mesobo and Desta have resulted in higher deviation of account payable recorded 36% and 37% deviation respectively. Delo which had 8% average account payable proportion of its total short term debt showed for least deviation among the companies under study. This is due to a reason that Delo uses account payable rarely as an alternative source of finance.

**Table 4.7 Short term debt composition on the periods under study**

| YEAR | Average(Mean) | | | Standard deviation | |
|---|---|---|---|---|---|
| | BOD ratio (%) | A/p ratio (%) | others (%) | BOD ratio (%) | A/p ratio (%) |
| **2004** | 31.32 | 30.98 | 37.7 | 26 | 37 |
| **2005** | 30.8 | 20.24 | 48.96 | 39 | 35 |
| **2006** | 31.68 | 19.14 | 49.18 | 36 | 23 |
| **2007** | 30.2 | 7.76 | 62.04 | 40 | 12 |
| **2008** | 39.8 | 25.28 | 34.92 | 36 | 32 |
| **2009** | 32.4 | 22.62 | 44.98 | 43 | 29 |

**Source:** *Own compilation from secondary data*

**Note: BOD ratio**= Bank overdraft/total current liability, **A/P ratio**= Account payable/total current liability and others= other current liability like accrued payables and payable to associates

In Table 4.6, the study indicated the average proportion of short term debt components out of the total short term debt, in which except for Delo which heavily rely on bank over draft, the remaining companies short term debt composition shows for highest proportion of other current liabilities such as accruals, tax payables, payable to associates, etc. However, Table 4.7 summarizes the average annual proportion of the short term debt components on total short term debt ratio.

Table 4.7 revealed that in 2008 the companies have used a highest proportion of bank over draft (39.8%), where as the remaining periods shows for average 31% bank over draft were used by the companies out of their total short term debt. In 2004, the highest proportion of account payable (30.98%) were used as compared to other periods. 2007 shows for least account payable (7.76%) out of the total short term debt were used by the companies. In all periods, the major component of short term debt is seen as other current liabilities such as accruals, tax payables, payable to associates etc. During 2004, there was highest deviation in account payable proportion on total short term debt and 2005, 2006, 2007, 2008, and 2009 resulted in higher deviation of bank over draft proportion on total short term debt accounted for 39%, 36%, 40%, 36% and 43% respectively.

**Table 4.8 Summery statistics**

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| **Size** | 30 | 7.683433 | .9757664 | 6.28 | 9.38 |
| **SOA** | 30 | .4425667 | .196011 | .11 | .77 |
| **AVProf** | 30 | .0289867 | .0818007 | -.2132 | .1713 |
| **Growth** | 30 | .2994 | .5179545 | -.92 | 2.09 |
| **Liq** | 30 | 1.348333 | 1.146308 | .16 | 4.63 |
| **TDR** | 30 | . 5055667 | .2659515 | .12 | 1.13 |
| **CLR** | 30 | . 2760667 | .124045 | .12 | .73 |
| **LDR** | 30 | .2499667 | .269732 | 0 | 1 |

**Source**: STATA output

As it is shown in the above Table 4.8, the average size of the companies is 7.683433 in terms of natural logarithm of total assets. The average tangibility shows that the companies hold 44.26% of their total assets as fixed asset. There is highest variation among firm's size, structure of asset, liquidity and growth and least variation in return.

The total debt ratio shows that the firms are leveraged on average 50.56%, in which current liability accounts for higher proportion than long term debt. There is higher deviation in total debt and long term debt ratios among the firms.

The higher deviation in total debt has resulted as a result of the highest deviation in long term debt among the firms.

## 4.2 ECONOMETRIC ANALYSIS

### 4.2.1 MODEL TESTS

For the econometric estimation to bring about best, unbiased/reliable and consistent result, it has to fulfill the basic linear classical assumptions. The basic assumptions include: linearity in parameters of the regression model, for given explanatory variables the mean value and the variance of the disturbance term (Ui) is zero and constant (homoscedastic) respectively, there is no correlation in the disturbances, no correlation between the regressors and the disturbance term, no exact linear relationship (multicollinearity) in the regressors and the stochastic (disturbance) term Ui is normally distributed (Donald and Jemes 1997; Gujarati, 1995). In this paper since the data employed is pooled cross sectional data type, the most important tests such as normality, multicollinearity and heteroscedasticity tests are conducted and the appropriate remedies are taken.

#### 4.2.1.1 NORMALITY TEST

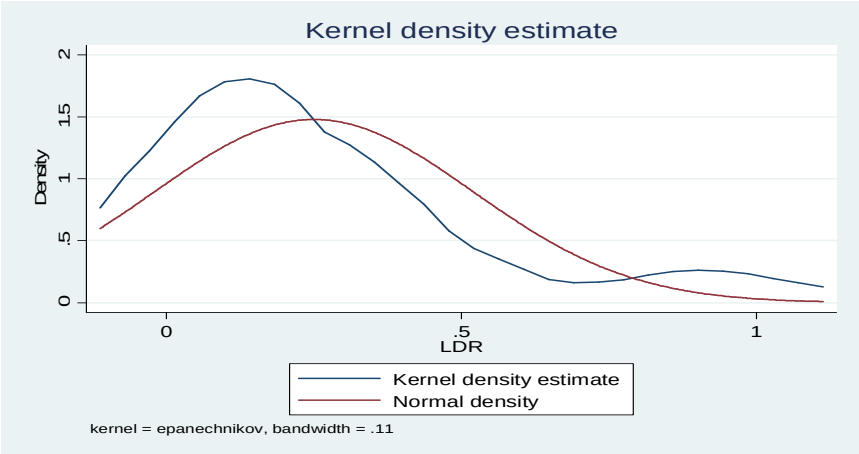
There are different approaches used to test for normality, which tests for the second assumption of OLS, in which the random variable (Ui) is assumed to be normally distributed. It portrays the normal distribution of errors (Ui) about the population regression line. Thus, the study has used graphical and numerical test of normality as follows.

**1. Graphical test for normality**

Kernel density plot is the popularly used graphical test for normality. This graphical approach helps to depict the normal distribution along with kernel density estimate of

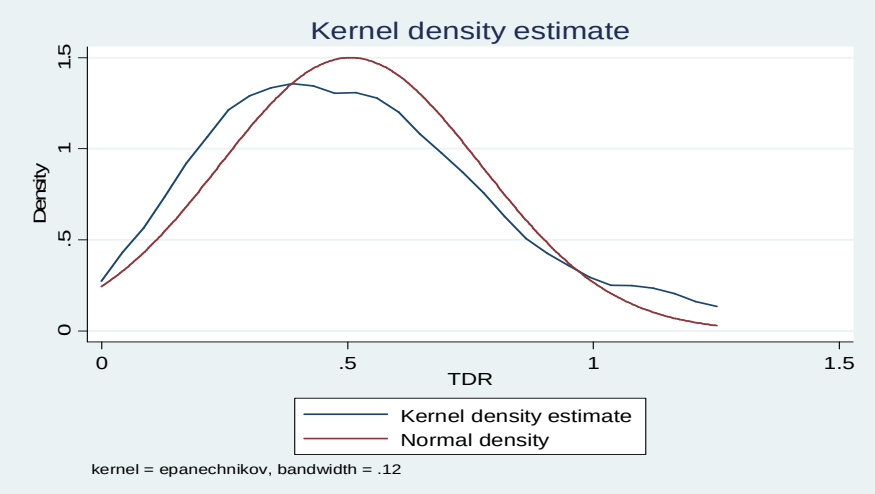
the data set. If the shapes of the two plots are significantly different, the error terms are not distributed normally. Below are the test graphs for the three models formulated.

**Fig 4.1 Kernel Density graph for Total debt ratio model**



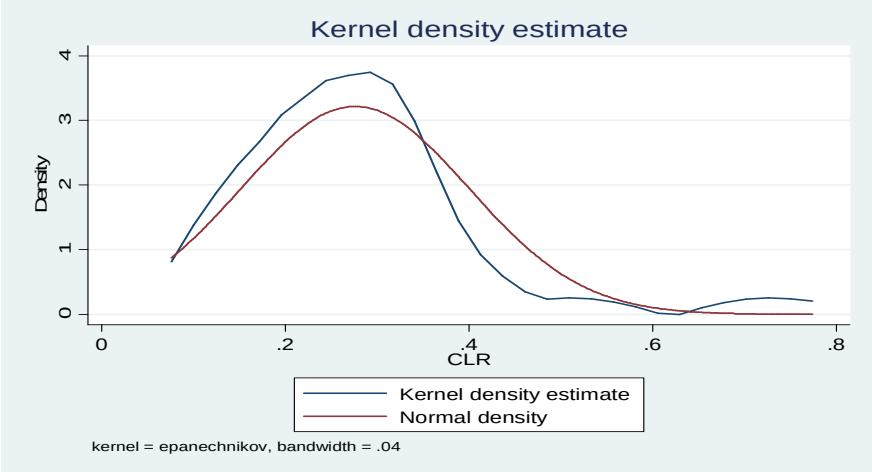

**Source**: STATA output results

**Fig 4.2 Kernel Density graph for Long term debt ratio model**




**Source:** STATA output results

Fig 4.3 **Kernel Density graph for Current liability ratio model**




**Source:** STATA output results

As it can be seen from the above graphs (figure 4.1- 4.3) , the kernel density estimate graph(the non smooth normal distribution curve) has no significant difference from the standard normal curve(smooth and bell shaped graph) assuring that the error is normally distributed, as there is no significant difference between the two plots(kernel density and normal density). But this does not give assurance as to the correctness of the estimated normality. Hence, the following numerical tests are used.

**2. Numeric/Non graphical test for normality**

**i. Skewness/Kurtosis tests for Normality**

The Kolmogorov-Smirnov test was used to determine whether the distribution of the residuals was significantly different from that of theoretical normal distribution. This test reveals that if the p-value is small, it is rejected that the hypothesis that the residual is normally distributed, so that the alternative hypothesis that the residuals are not normally distributed will be accepted.

Below the skewness/ kurtosis results for the residual of the model is shown as follows:

**Table 4. 9 Skwness/kurtosis test for model normality**

| | | **----------Joint----------** | | |
|---|---|---|---|---|
| **Variable** | **Pr(skewness)** | **Pr(Kurtosis)** | **Adj chi2(2)** | **Prob>chi2** |
| residual hat | **0.853** | **0.445** | **0.64** | **0.7244** |

**Source:** STATA output results

As can be seen from the sktest table, the p-value of 72.44% is quite above the standard deviation of 5% level of significance showing that the data is normally distributed.

**ii. Shapiro-Wilk W test for Normal data**

The swilk test is another available test which performs the Shapiro-Wilk W test for normality. When p is small, it will reject the hypothesis that the residual is normal.

**Table 4.10 Shapiro-Wilk W test for model normality**

| **Variable** | **Obs** | **W** | **V** | **Z** | **Prob>Z** |
|---|---|---|---|---|---|
| **Residual hat** | **30** | **0.98246** | **0.557** | **-1.208** | **0.88653** |

**Source:** STATA output results

The p-value in the above table shows for higher value, 88.653%, so that p-value could not reject the null hypothesis that the error terms are normally distributed at 5% significance. Where this has proved that, the data is normally distributed. Both the graphic and numeric tests of normality as it is shown above declared that the data set is normally distributed at 5% significance. Having the guaranty of the normality of the data, the researcher has proceeded to other tests.

### 4.2.1.2 MULTICOLLINEARITY

Multicollinearity problem will exist when there is correlation between variables employed in the regression model (when the assumption that cov(x1, x2) = 0 is violated); that is the existence of a `perfect` or exact linear relationship among some or all explanatory variables of a regression model. As a rule of thumb, if the correlation coefficient between the two variables is greater than 0.8, one can conclude that there is a series problem of multicollinearity (Donald and Murphy, 1997; Gujarati, 1995). The study has used the following approaches to test the correlation of the explanatory variables as follows:

**i. The pair wise Correlation matrix analysis**

**Table 4. 11 Pair wise correlation of explanatory variables**

| | Size | SOA | Avprofit | Growth | Liq | Compdummy |
|---|---|---|---|---|---|---|
| **Size** | **1.0000** | | | | | |
| **SOA** | **-0.1475** | **1.0000** | | | | |
| **Avprofit** | **0.2676** | **-0.0269** | **1.0000** | | | |
| **Growth** | **0.0561** | **0.1305** | **-0.0994** | **1.0000** | | |
| **Liq** | **0.6033** | **-0.5550** | **0.1055** | **-0.1099** | **1.0000** | |
| **Compdummy** | **-0.2292** | **0.3342** | **0.1621** | **0.0928** | **-0.3697** | **1.0000** |

**Source: STATA output**

According to the test results in Table 4.11 above, the correlation coefficient between all variables under consideration is less than 0.8 implying that the explanatory variables can separately contribute to the variation in the dependent variable.

**ii. Auxiliary Regression**

The pair wise correlation approach of diagnosing the multicollinearity problem does not take the relation of an independent variable on all other independent variables in to account. So that regression of each independent variable on all other independent variables (called auxiliary regression) was run to assess the multicollinearity more precisely. The $R^2$ near to 1 indicates the high multicollinearity and larger $R^2$ indicates the larger multicollinearity.

**Table 4.12 Results of the models used to assess multicollinearity**

| Problem | Models $R^2$ | Adjusted $R^2$ | S.E |
|---|---|---|---|
| Model (1.1) | 0.4780 | 0.3693 | 0.77494 |
| Model(1.2) | 0.3873 | 0.2597 | 0.16865 |
| Model(1.3) | 0.1496 | -0.0276 | 0.08292 |
| Model(1.4) | 0.0616 | -0.1339 | 0.55154 |
| Model(1.5) | 0.6019 | 0.5190 | 0.79504 |
| Model(1.6) | 0.2169 | 0.0538 | 0.43751 |

The above auxiliary regression result shows that none of the explanatory variables are resulted in the $R^2$ nearer to 1. The results show that, there is no problem of multicollinearity on the data set. To further have strong assurance, the study has also used the following additional test.

**iii. The VIF technique**

The variance inflation factor (VIF), is a measure of the reciprocal of the complement of the inter-correlation among the predictor or explanatory variables. Reciprocal of VIF refers to tolerance, where VIF greater than 10 and Tolerance nearer to 0 indicate possible problem of multicollinearity. The VIF result is shown below.

**Table 4.13 the variance inflation factor (VIF)**

| **Variable** | **VIF** | **1/VIF** |
|---|---|---|
| **Liq** | 2.51 | 0.398093 |
| **Size** | 1.92 | 0.521978 |
| **SOA** | 1.63 | 0.612698 |
| **Comp.Dummy** | 1.28 | 0.783058 |
| **Avprofit** | 1.18 | 0.850411 |
| **Growth** | 1.07 | 0.938401 |
| **Mean VIF** | **1.60** | |

**Source:** STATA output

In the above table there is no VIF score above the value 10 and no value nearer to zero which measures tolerance or 1/VIF.Hence the above all tests confirmed that there is no multicollinearity problem in the data set.

### 4.2.1.3. HETEROSKEDASTICITY

An important assumption of the CLRM is that the disturbances $e_i$ appearing in the regression function is homoskedastic. Heteroskedasticity refers to the disturbance terms in the regression model. It defines where the condition in which the variance of disturbance error term ($e_i$s), is not constant across all observations. Here the study has used the following numerical tests for hetroskedasticity. The results are summarized as follows:

**i. The Breusch –Pagan Test**

Breusch-pagan-Godfrey test tests the homogeneousness of the variance of the disturbance error terms, where if the computed Chi-square($X^2$) exceeds the critical Chi-square ($X^2$) value at the chosen level of significance; one can reject the null hypothesis of homoskedasticity. The following result shows for the three models using Breusch-pagan's test.

**Table 4.14 Breusch-Pagan/Cook-Weisberg test for heteroskedasticity existence in the models**

Ho: Constant variance

Variables: fitted values for TDR, LDR and CLR

| | TDR model | LDR model | CLR model |
|---|---|---|---|
| Chi2(1) | 0.21 | 0.72 | 5.91 |
| Prob>Chi2 | 0.6500 | 0.3963 | 0.0150 |

**Source: STATA out put**

The significant result from Breusch-Pagan test, i.e. P-value of 1.5%, for Current liability model indicates that the regression of the residuals on the predicted values depicts hetroskedasticity.

But the remaining models are insignificant with p-values of 39.63% and 65% respectively for models long term debt and Total debt, where this depicts that the variance is homogeneous.

**ii. The White's Test**

This test helps to test the null hypothesis for its variance of the residuals' homogeneity. If the chi-square value obtained exceeds the critical chi-square value at the chosen level of significance, the conclusion is that there is hetroscedasticity. If the p-value is above 5%, we would also have to accept the null hypothesis that the variance is homogenous.

**Table 4. 15 Total debt ratio Model white's test**

| **Source** | **Chi2** | **df** | **P** |
|---|---|---|---|
| Hetroskedasticity | 28.72 | 26 | 0.3240 |
| skewness | 2.58 | 6 | 0.8591 |
| Kurtosis | 1.45 | 1 | 0.2278 |
| **Total** | **32.76** | **33** | **0.4792** |

**Source:** STATA output

**Table 4. 16 Long term debt ratio model white's test**

| **Source** | **Chi2** | **df** | **P** |
|---|---|---|---|
| Hetroskedasticity | 24.43 | 26 | 0.5513 |
| skewness | 6.46 | 6 | 0.3732 |
| Kurtosis | 1.50 | 1 | 0.2208 |
| **Total** | **32.40** | **33** | **0.4970** |

**Source:** STATA output

**Table 4.17 Current liability ratio model white's test**

| Source | Chi2 | df | P |
|---|---|---|---|
| Hetroskedasticity | 21.55 | 26 | 0.7130 |
| skewness | 6.13 | 6 | 0.4091 |
| Kurtosis | 1.31 | 1 | 0.2517 |
| **Total** | **28.99** | **33** | **0.6671** |

**Source:** STATA output

As it can be seen from the above Tables(Table 4.15-4.17), the p-value is higher than 5% which is 47.92%, 49.70% and 66.71% respectively for models Total debt ratio, Long term debt ratio and current liability ratio respectively, is supporting the null hypothesis that the variance is homogeneous. Therefore these non graphic tests revealed that the model employed is not sensitive to problems of hetrosedsiticity. But for the model of current liability, the results of the two approaches are contradictory, so that we accepted the Breusch-Pagan/Cook-Weisberg result, that there is problem of hetroscedasticity, because it is popularly used test for hetroscedasticity. As a result remedial actions has been taken for the hetrosedsiticity, to remove the problem, a robust approach of transforming the data set is used, so that latter the hetroskedaciticy is removed.

### 4.2.2. MODEL ESTIMATION

The main purpose of the study as described earlier is to analyze the financial structure of the private limited manufacturing companies. As a result, it is decided to examine the relation between firm characteristics and financial structure decision. In order to empirically investigate these determinants, three equations are estimated: Total debt to total asset ratio, current liability to total asset ratio and Long term debt to total asset ratio.

The three equations employed here are:

**DRi, t = β0 + β1SIZE i, t +β2SOA i,t + β3AVPROF i,t +β4GROWi,t +β5 LIQ i, t+ β6COMPDUMMYi,t + εi,t**

**CLR i, t β0 + β1SIZE i, t +β2SOA i,t + β3AVPROF i,t +β4GROWi,t +β5 LIQ i, t+ β6COMPDUMMYi,t + εi,t**

**LDR i, t = β0 + β1SIZE i, t+β2SOA i,t +β3AVPROF i,t +β4GROWi,t +β5 LIQ i,t +β6COMPDUMMYi,t + εi,t**

A model specification error can occur when one or more relevant variables are omitted from the model, or one or more irrelevant variables are included in the model (Gujirat, 1995). Model specification errors can significantly affect the estimate of regression coefficients, where, if relevant variables are omitted from the model, the common variance they share with the included variables may be wrongly attributed to those variables and the error term is inflated. On the other hand, if irrelevant variables are included in the model, the common variance they share with included variables may be wrongly recognized to them. To detect the specification errors, the study has used the following test:

**i. Ramsey Omitted variables test**

The Ramsey omitted variable test runs the Ramsey regression specification error for omitted variables. It tests the null hypothesis that, the model has no omitted variables. This test shows that if the Prob> F is insignificant; there is no model specification error.

**Table 4.18 Ramsey model specification error test**

Ramsey REST test using powers of the fitted values of the three models

Ho= Model has no omitted variables

| | **TDR model** | **LDR model** | **CLR model** |
|---|---|---|---|
| **F**(3, 20) | 2.73 | 1.23 | 0.88 |
| **Prob >F** | 0.0709 | 0.3259 | 0.4676 |

**Source**: STATA output

As can be seen from the Table 4.18, the Ramsey test results show that there is no problem of model specification in which all the models' P value declares for higher value than the level of significance 5%. In which we accept the null hypothesis that the there is no model specification error.

### 4.2.3 Multiple Regression Analysis

For the sake of the analysis, only the trade-off theory and the pecking order theory will be considered. Ethiopia is an emerging economy. Its financial market is underdeveloped as previously discussed and is hence very inefficient since the finance gap and information asymmetries which Ethiopian companies face are expected to be particularly severe. As a result, the pecking order theory should be the more appropriate theory in explaining the capital structure decisions of firms operating in the emerging Ethiopian economy. Thus, the hypothesized directions of influences of the explanatory variables on the leverage variable under these two theories are given below and the expectation is that the findings should be consistent with the direction implied by the pecking order theory

**Table 4.19 Capital structure theory and expected sign on leverage for explanatory variables.**

| | **Trade-off theory** | **Pecking order theory** |
|---|---|---|
| Firm Size | + | + |
| Collateral | + | + |
| Profitability | + | − |
| Growth | − | + |
| Liquidity | + | - |

**i. Correlation Analysis**

In this section, analysis on the relationship between dependent and independent variables is made. The correlation matrix shown below depicts the correlation of all dependent and independent variables together, where dependent variables are total debt ratio, long term debt ratio and current liability ratio and the explanatory variables are size, structure of asset(tangibility), average profit rate(RoA), growth, liquidity and company dummy variables are summarized as follows:

**Table 4.20 correlation matrix both explained and explanatory variables**

| | Tdr | clr | ldr | size | soa | avprof | growth | liq | compdu~y |
|---|---|---|---|---|---|---|---|---|---|
| **Tdr** | 1.0000 | | | | | | | | |
| **Clr** | 0.2181 | 1.0000 | | | | | | | |
| **Ldr** | 0.8111 | -0.2555 | 1.0000 | | | | | | |
| **Size** | 0.0473 | -0.4798 | 0.2350 | 1.0000 | | | | | |
| **Soa** | 0.4737 | 0.3007 | 0.4329 | -0.1475 | 1.0000 | | | | |
| **Avprof** | -0.3112 | 0.0606 | -0.4064 | 0.2676 | -0.0269 | 1.0000 | | | |
| **growth** | 0.2046 | -0.0437 | 0.2183 | 0.0561 | 0.1305 | -0.0994 | 1.0000 | | |
| **Liq** | -0.4183 | -0.5944 | -0.1702 | 0.6033 | -0.5550 | 0.1055 | -0.1099 | 1.0000 | |
| **Comp.** | 0.6854 | 0.3662 | 0.3922 | -0.2292 | 0.3342 | 0.1621 | 0.0928 | -0.3697 | 1.0000 |
| **Dummy** | | | | | | | | | |

**Source: STATA out put**

As it can be seen from the above Table 4.20, the results show that profitability is negatively related to total debt and long term borrowings, but positively related with current liability. There is negative relationship between growth rate and short-term debt. There is positive relationship between collateral (SOA) and all leverage ratios (TDR, LDR and CLR). This represents the corollary of the proposition that in order to raise funds, enterprises are likely to have significant collateral to offer. If they do not, they will need to rely on retained earnings.

This suggests for firms that lack of collateral is not so easily to be overcome, even when raising short-term funds. The relationship between size and borrowing is different for

short-term debt and long-term debt. In the case of short-term debt, the relationship is negative, that is to say the smaller the firm, the greater the reliance on short-term debt. There is positive relationship between growth and total debt. Similar relationship also occurs between growth and long term debt but negative relationship with current liability.

The liquidity relationship with borrowing shows that negative relationship exists with all leverages. This may be due to the fact that as leverage increases liquidity decreases, in which for additional borrowing, the liquid asset may not be able to fulfill the obligation. As it is noted from the above correlation matrix table, the result for correlation between size and leverage is positive for both long term debt and total debt and negative for current liability. The result confirms the first hypothesis, except for current liability. The results for structure of assets (tangibility) confirm the second hypothesis of positive relationship with leverage, Profitability is hypothesized to have a negative relationship with leverage; the results confirm this except for current liability, which is positive. The fourth hypothesis stated that there is negative relationship between growth and leverage, where the results show that contrary to this hypothesis except for current liability and the result of the relationship between liquidity and leverage confirmed the fifth hypothesis which is a negative relationship.

To conclude, the explanatory variables don't have similar relationship with long term debt and short term debt, as for total debt, the result of the relationship is an averaged result. From the above results, except for Structure of assets and liquidity, the remaining variables have different relationship for both long term debt and current debt. To determine the significant determinants of financial leverage and to determine the comparable beta coefficients, the OLS regression results are explained in the following section.

### ii. Discussion on regression results

Under this section, the regression results of the three models namely, total debt ratio (TDR), the long term debt ratio (LDR) and current liability ratio (CLR) are discussed. Significant determinants of financial leverage have been identified and analogous explanations and interpretations are made on the coefficients of the explanatory variables that determines as to how a single unit change in explanatory variable affect leverage( increase or decrease in leverage ratio). The detail analysis and discussion on the linear multiple regression results for the three models is presented below.

#### 1. Total debt ratio (Total debt/Total assets) Model

Explanatory variables size in terms of natural logarithm of assets, growth(change in annual sales), average profit(average profit/total assets),liquidity(quick ratio),structure of asset(tangibility) and company dummy which shows the companies difference in total debt ratio are regressed against total debt ratio, to determine how these variables affect the total debt ratio. The following results have been found from the STATA OLS regression result.

**Total Debt ratio (TDR) = $\beta$0 + $\beta$1SIZE i, t + $\beta$2 SOA i, t+ $\beta$3AVPROFi, t**

**+$\beta$4GROWTHi, t+$\beta$5 LIQ i, t + + $\beta$6COMPDUMMYi,t + εi,t**

**Table 4.21 Total debt regression results**

```
. reg  tdr size soa avprof growth liq compdummy
```

| Source | SS | df | MS | Number of obs = | 30 |
|---|---|---|---|---|---|
| Model | 1.89004997 | 6 | .315008329 | F( 6, 23) = | 44.97 |
| Residual | .161125431 | 23 | .007005454 | Prob > F = | 0.0000 |
| | | | | R-squared = | 0.9214 |
| | | | | Adj R-squared = | 0.9010 |
| Total | 2.0511754 | 29 | .070730186 | Root MSE = | .0837 |

| tdr | Coef. | Std. Err. | t | P>\|t\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| size | .1743754 | .0220469 | 7.91 | 0.000 | .128768 | .2199829 |
| soa | .0874774 | .1013014 | 0.86 | 0.397 | -.1220804 | .2970353 |
| avprof | -1.806394 | .2060381 | -8.77 | 0.000 | -2.232617 | -1.380172 |
| growth | -.006001 | .0309766 | -0.19 | 0.848 | -.0700809 | .058079 |
| liq | -.1015243 | .0214895 | -4.72 | 0.000 | -.1459786 | -.0570699 |
| compdummy | .4374759 | .0390504 | 11.20 | 0.000 | .356694 | .5182578 |
| _cons | -1.002719 | .1535603 | -6.53 | 0.000 | -1.320383 | -.6850553 |

**Source**: STATA output

As it is shown in the above Table 4.21, the R-squared and adjusted R-squared 92.14% and 90.10% respectively depicts the explanatory power of the independent variables. The R-squared support that 92.14% of the change or variation in total debt can be explained by the explanatory variables, only 7.86% of the total variation can be explained by other variables. In support of this argument, the F-test result shows for 44.97 significant at 0.0000 (1% level of significance), in which it shows that the model is fit to estimate the predicting coefficients of the independent variable.

From the above regression result, size, average profit, liquidity are found to be the significant determinants of leverage in proxy of total debt at 1% level of significance. The remaining variables growth and structure of assets (tangibility) are insignificant. The company difference in leverage measured using a dummy variable shows that, it is significant; so that this depicts that there is significant difference in leverage among firms.

The first hypothesis ($\mathbf{H_{01}}$) was there is a positive significant relationship between size and financial leverage. The result of the regression reveals that the hypothesis has to be accepted. The results for size confirm for tradeoff theory and pecking order theory, where these theory state that there is positive relationship between size and leverage. because size is assumed as a proxy for earnings volatility and larger firms are generally more diversified and show less volatility according to the tradeoff theory.

According to pecking order theory, size is positively related to leverage, arguing that larger firm need more funds to finance their activity, as a result following the financing pattern; they go for external finance, when internal finance is not sufficient.

The result of size in this study is consistent with other studies conducted (Hans, eta'l , 2009; Martin, eta'l , 1988; OZkan, 2000; Rajan and Zingales, 1995; Titman and wessels, 1988). The result of the coefficient for size reveals that, a one unit increase in size (measured in terms of natural logarithm of total assets) leads to 0.174 increases in total debt in the same direction.

The second hypothesis ($\mathbf{H_{02}}$) states that there is significant positive relationship between structure of assets (tangibility) and financial leverage. The result of the regression shows

that there is positive relationship between structure of assets and total debt, though it is insignificant. Therefore, the second hypothesis failed to be accepted. Different empirical studies such as (Hans, eta'l, 2009 ;Jean, 2002; Titman and wesseles ,1988) show similar signs for assets structure which is a proxy of collateral (tangibility).The reason is that tangible asset often reduce the cost of financial distress, because they tend to have higher liquidation value and can support more debt.

The third hypothesis ($\mathbf{H_{03}}$) was, there is negative significant relationship between average profit and financial leverage, as a result, the regression output depicts that the hypothesis has to be accepted. Average profit is measured in return on assets, calculated using average profit divided by total assets.

The regression result for this variables shows that there is a negative relationship between total debt and average profit; this is consistent with the pecking order theory. More profitable firms will have the ability to retain more; as a result, they will be less prone to external finance. The firms prefer internal financing to external financing. The result of the effect of profit on total debt is consistent with different empirical studies. (Hans, eta'al, 2009; Keshar, 2004; Suhaila, eta'al, 2008) had similar results.

The regression result, beta coefficient of average profit shows that a one unit change or increase in average profit measured in terms of return on assets as a proxy of average profit rate leads to a decline in leverage as a proxy of total debt in 1.81 units.

The Fourth hypothesis ($\mathbf{H_{04}}$) supports that there is positive significant relationship between growth as a proxy of annual change in sales and financial leverage. The result is inconformity to trade of theory and contrary to pecking order theory. Thus, it is failed to be accepted. (Chung, 1993; Rajan and Zingales, 1995; Titman and Wesseles, 1988) found similar results. The reason for this may be as growth opportunities increase, the cost of financial distress also increases and it may be also the assets needed for future growth are poor collateral. Probably this could be a reason for growth to have a negative sign contradictory to pecking order theory, as collateral is the major problem faced by the companies.

The fifth hypothesis ($\mathbf{H_{05}}$) states that there is negative significant relationship between liquidity and leverage. Liquidity is measured in terms of quick ratio. The result of the regression shows that there is significant negative relationship between liquidity and total debt significant at 1% level.

Therefore the fifth hypothesis is accepted and the result is consistent to pecking order theory, where the companies finance their activity following the financing pattern and it is contradictory to the tradeoff theory, in which liquidity measures the potential to meet short term debt obligations; an illiquid firm will be restricted in attracting debt. The result of this study is consistent with previous studies (Suhaila, eta'l, 2008; Sogorb, 2005). This paper mainly supports the pecking order theory, taking into consideration the country's financial underdevelopment, so that liquidity determines a significant negative effect on total debt. This shows that the companies under study finance their activity following the pecking order pattern. Higher liquid company borrows less, as it will have higher liquid assets on hand and less liquid companies search for external finance. The beta coefficient for liquidity reveals that, as there is a one unit increase in liquidity ratio, this leads to 0.102 units decrease in total debt ratio.

**2. Long term debt ratio(Total long term debt/total assets)**

To run this regression similar explanatory variables like that of the total debt ratio are used to determine how these explanatory variables affect long term debt ratio, whether they have similar effect like that of total debt ratio or not.

The following equation shows for the linear regression model run on STATA.

$$\textbf{Long term Debt ratio (TDR)} = \beta 0 + \beta 1 \textbf{SIZE i, t} + \beta 2 \textbf{ SOA i, t} + \beta 3 \textbf{AVPROFi, t} + \beta 4 \textbf{GROWTHi, t} + \beta 5 \textbf{ LIQ i, t} + + \beta 6 \textbf{COMPDUMMYi,t} + \varepsilon \textbf{i,t}$$

**Table 4.22 Long term debt model regression results**

```
. reg  ldr size soa avprof growth liq compdummy
```

| Source | SS | df | MS | | |
|---|---|---|---|---|---|
| Model | 1.58400082 | 6 | .264000136 | Number of obs = | 30 |
| Residual | .525904173 | 23 | .022865399 | F( 6, 23) = | 11.55 |
| | | | | Prob > F = | 0.0000 |
| Total | 2.10990499 | 29 | .072755344 | R-squared = | 0.7507 |
| | | | | Adj R-squared = | 0.6857 |
| | | | | Root MSE = | .15121 |

| ldr | Coef. | Std. Err. | t | P>\|t\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| size | .1836341 | .0398307 | 4.61 | 0.000 | .1012379 | .2660303 |
| soa | .3354486 | .183015 | 1.83 | 0.080 | -.0431467 | .7140439 |
| avprof | -2.100374 | .3722364 | -5.64 | 0.000 | -2.870404 | -1.330344 |
| growth | .0103113 | .0559635 | 0.18 | 0.855 | -.1054579 | .1260806 |
| liq | -.04296 | .0388237 | -1.11 | 0.280 | -.1232729 | .037353 |
| compdummy | .2979931 | .07055 | 4.22 | 0.000 | .1520494 | .4439368 |
| _cons | -1.41224 | .277428 | -5.09 | 0.000 | -1.986144 | -.8383369 |

**Source:** STATA output

As it is shown in the above Table 4.22, the R-squared and adjusted R-squared 75.07% and 68.57% respectively depicts the explanatory power of the independent variables. The R-squared support that 75.07% of the change or variation in Long term debt can be explained by the explanatory variables, only 24.93% of the total variation can be explained by other variables. In support of this argument, the F-test result shows for 11.55 significant at 0.0000 (1% level of significance), in which it shows that the model is fit to estimate the predicting coefficients of the independent variable.

From the above regression result, size and average profit are found to be significant at 1% and structure of asset (tangibility) is significant at 10%. These explanatory variables are found to be significant determinants of leverage in proxy of long term debt. The remaining variables growth and liquidity are insignificant. The company difference in leverage measured using a dummy variable shows that, it is significant; so that this depicts that there is significant difference in leverage among firms.

The signs of the coefficients for both size and structure of assets (tangibility) is consistent with both tradeoff and pecking order theory, while average profit, liquidity and growth are consistent with pecking order theory and contradictory to tradeoff theory.

The first hypothesis ($\mathbf{H_{01}}$) was hypothesized that a positive significant relationship between size and financial leverage exists. The result of the regression is in favor of

hypothesis to be accepted. The results for size confirm for tradeoff theory and pecking order theory. The result of size as a determinant for long term debt, in this study is consistent with other studies conducted (Hans, eta'al, 2009; OZkan, 2000; Rajan and Zingales, 1995; Titman and wessels, 1988).

The result of the Beta coefficient for size reveals that, a one unit increase in size (measured in terms of natural logarithm of total assets) leads to 0.184 units increase in long term debt in the same direction.

The second hypothesis ($\mathbf{H_{02}}$) states that there is significant positive relationship between structure of assets (tangibility) and financial leverage. The result of the regression shows that there is positive relationship between structure of assets and long term debt, though it is significant at 10% level. Therefore, the second hypothesis is accepted. The sign of the beta coefficient of asset structure is consistent with both tradeoff and pecking order theories. The beta coefficient shows, a one unit increase in asset structure (measured as a ratio of fixed assets to total assets), leads to 0.335 units change in long term debt leverage. Different empirical studies show similar signs for assets structure which is a proxy of collateral (tangibility) its effect on long term debt (Hans, eta'al, 2009; Jean, 2002; Laurent, 2002; Lahcen and Jawad, 2008; Titman and wesseles, 1988).

The third hypothesis ($\mathbf{H_{03}}$) statement reveals that, there is negative significant relationship between profit and long term debt. As a result, the regression output depicts similar result, and the hypothesis has to be accepted. Average profit is measured in terms of return on assets, calculated using average profit divided by total assets.

The regression result for this variables shows that there is a negative relationship between long term debt and average profit; this is consistent with the pecking order theory. More Profitable firms will have the ability to retain more; as a result, they will be less prone to external finance. The firms prefer internal financing to external financing.

The result of the effect of profit on long term debt is consistent with different empirical studies. (Hans, eta'al, 2009; Keshar, 2004; Lahcen and Jawad, 2008; Myers and Majiluf, 1984; Rajan and Zingales ,1995; Suhaila, eta'l, 2008).

The regression result, beta coefficient of average profit shows that a one unit increase in average profit measured in terms of return on assets as a proxy of average rate, leads to a decline in 2.1004 units in leverage as a proxy of long term debt.

The Fourth hypothesis ($\mathbf{H_{04}}$) supports that there is positive significant relationship between growth as a proxy of annual change in sales and financial leverage. The results of the regression show that there is positive relationship, though it is not significant. The hypothesis is rejected that growth is a determinant for long term debt. The sign of the beta coefficient result is inconformity to pecking order theory; this implies that higher growth demanding for higher debt to finance the growth and new investments. Similar results found by different researchers (Jean, 2002; Lahcen and Jawad, 2008; Michael's, eta'al, 1999; Rajan and Zingales, 1995).

The fifth hypothesis ($\mathbf{H_{05}}$) states that there is negative significant relationship between liquidity and leverage. Liquidity is measured in terms of quick ratio. The result of the regression shows that there is no significant relationship between liquidity and long term debt. Therefore the fourth hypothesis is failed to be accepted, as a result further analysis is not made on this variable. The sign of the beta coefficient for liquidity reveals similar proposition to pecking order theory, but it is found to be insignificant determinant of long term debt. The reason may be, because liquidity is related to short term obligations, it will have higher influence on short term debts than long term. The cumulative effect resulted in significant negative effect on total debt as it is explained above.

**3. Current liability ratio(total current liability/total assets**

To run this regression, similar explanatory variables (size, structure of assets, average profit, growth, liquidity and company dummy) were used. This model had encountered a hetrosedasticity problem as it has been explained in the test for constant variance of disturbance term in the data set. Taking into consideration the problem, a remedial action have been taken using the robust approach. Robust regression deals with the problem of outliers in a regression. It uses a weighting scheme that causes outliers to have less impact on the estimates of regression coefficients.

The following equation is used to estimate the predictive power of the explanatory variables.

**Current liability ratio (CLR)i, t = $\beta$0 +$\beta$1SIZE i, t +$\beta$2 SOA i,t+ $\beta$3AVPROFi, t +$\beta$4GROWTHi, t+$\beta$5 LIQ i, t + + $\beta$6COMPDUMMYi,t + εi,t**

The results of the OLS multiple regressions are summarized as follows:

**Table 4.23 Current liability ratio model regression results**

Linear regression — Number of obs = 30; F( 6, 23) = 8.97; Prob > F = 0.0000; R-squared = 0.4255; Root MSE = .10558

| clr | Coef. | Robust Std. Err. | t | P>\|t\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| size | -.0272038 | .0223579 | -1.22 | 0.236 | -.0734547 | .0190471 |
| soa | -.0057369 | .1145293 | -0.05 | 0.960 | -.2426588 | .231185 |
| avprof | .201639 | .1678786 | 1.20 | 0.242 | -.1456443 | .5489224 |
| growth | -.0189072 | .0468679 | -0.40 | 0.690 | -.1158609 | .0780465 |
| liq | -.047619 | .0210375 | -2.26 | 0.033 | -.0911385 | -.0040995 |
| compdummy | .0395097 | .0385963 | 1.02 | 0.317 | -.0403329 | .1193523 |
| _cons | .5226726 | .1624179 | 3.22 | 0.004 | .1866855 | .8586596 |

**Source**: STATA output

As it is shown in the above Table 4.23, the R-squared 42.55% depicts the explanatory power of the independent variables. The R-squared support that 42.55% of the change or variation in current liability can be explained by the explanatory variables. Only 57.45% of the total variation can be explained by other variables not included in this model. In support of this argument, the F-test result shows for 8.97 significant at 0.0000 (1% level of significance), in which it shows that the model is fit to estimate the predicting coefficients of the independent variable.

From the above regression result, liquidity is found to be significant at 5% determinant of leverage in proxy of current liability. The remaining variables size, average profit, growth, and structure of assets (tangibility) are insignificant. The company difference in leverage measured using a dummy variable shows, it is insignificant; so this depicts that there is no significant difference in current liability among firms.

The signs of the coefficients for both size and structure of assets (tangibility) is in consistent with both tradeoff and pecking order theory, while both average profit and growth are consistent with pecking order theory and contradictory to tradeoff theory. Liquidity is found to be consistent to pecking order theory.

The first hypothesis ($\mathbf{H_{01}}$) was there is a positive significant relationship between size and financial leverage. The result of the regression reveals that the hypothesis is failed to be accepted. The result for size is contradictory to tradeoff theory and pecking order theory. This may be resulted as a result of the specific features of the companies under study. The major source of current liability for the companies is from account payable, accruals, and payments to associates, where bank over draft covers less percentage as a proportion of the total current liability as it has been explained before in Tables 4.6 and 4.7. These types of current liability are spontaneous and are cost free by their nature, they do not require a guarantee for the fund provider like collateral and size may also not be determinant. This may also show that larger firms rely more on long term debt and use less short term debt, the increase in long term debt outweigh a decrease in short term debt. As the result is not significant, further analysis is not made on the beta coefficient of size. Similar studies were found (Hans, eta'al, 2009).

The second hypothesis ($\mathbf{H_{02}}$) states that there is significant positive relationship between structure of assets (tangibility) and financial leverage. The result of the regression shows that the hypothesis is rejected. The sign of beta coefficient of asset structure is inconsistent with both tradeoff and pecking order theories and it is also found to be insignificant determinant to current liability.

This may be due to a reason as it has been explained above, the major part the total current liability is non bank loans which does not require collateral leads for firms to go for such sources of finance. This depicts that, as a firm has less collateral value assets, the firm will tend to use short term debt than long term debt which is cost free.

The third hypothesis ($\mathbf{H_{03}}$) stated that, there is negative significant relationship between average profit and leverage as a proxy of current liability, as a result, the regression failed to accept the hypothesis.

The regression result for this variables shows that there is positive relationship between current liability and average profit; this is consistent with the tradeoff theory, which implies that, the higher profitability of firms shows higher debt capacity and low risk to debt holders. This may be due to the fact that financial institution rely on the profitability of the company, to lend, the short term loan (bank overdraft), to be guaranteed for payment. Though, average profit is found to be insignificant determinants of current liability, the sign of the beta coefficient is consistent with the tradeoff theory and empirical results (Booth, eta'al, 2001; Michael, eta'al, 1999).

The Fourth hypothesis ($\mathbf{H_{04}}$) supports that there is positive significant relationship between growth as a proxy of annual change in sales and financial leverage. The results of the regression show that there is negative relationship; as a result the hypothesis is rejected. The result is inconformity to trade of theory and contrary to pecking order theory (Chung, 1993; Rajan and Zingales, 1995; Titman and Wesseles, 1988).

The fifth hypothesis ($\mathbf{H_{05}}$) states that there is negative significant relationship between liquidity and leverage. The result of the regression shows that there is significant negative relationship between liquidity and current liability significant at 5% level. Therefore the fifth hypothesis is accepted.

The result is consistent to pecking order theory, where the companies finance their activity following the financing pattern and it is contradictory to the tradeoff theory, in which liquidity measures the potential to meet short term debt obligations. The result of this study is consistent with previous studies (Sogorb 2005; Suhaila, eta'al, 2008). Higher liquid company borrows less, as it will have higher liquid assets on hand and less liquid companies search for external finance. The beta coefficient for liquidity reveals that as there is a one unit increase in liquidity ratio, this leads to 0.048 units decrease in total debt ratio. Liquidity has strong effect on current liability than long term debt; this confirms the direct association between liquidity and current liability. The higher the liquidity is the higher the ability to pay short term obligation.

# CHAPTER FIVE
# CONCLUSIONS AND RECOMMENDATIONS

## 5.1 CONCLUSIONS

This study analyzed the financial structure of private limited manufacturing companies in Mekelle. Financing patterns and challenges of the companies is assessed and the determinants of financial structure decisions of private limited manufacturing companies are examined. Overall, Short-term debt constitutes a relatively high proportion of total debt of the firms under study. It is composed of majorly with other current liabilities (such as account payable and accruals), followed by bank over draft. The results indicated that larger firms in terms of size are more likely to rely on long-term debt finance. This is because they are often perceived to have better reputations with debt finance providers. Companies access loans from banks in the form of short term (mainly bank over draft) and long term debts. Majority of the companies finance their working capital and fixed assets using short term debt and projects using long term debt and retained earnings. The majority of the companies rely on debt and their strategy is debt driven. Other sources of finance such as leasing are not exploited and equity is found to be the least accessible source. The debt ratio of the companies is declining from period to period resulting in higher equity ratio. This is due to the reason that the companies are earning better profit from period to period, which leads to use higher retained earnings.

The size of finance currently accessed is found to be average, but problems are faced with the company's collateral requirement. More than 100% collateral is required to borrow finance, in which 50-74% of the collateral is borrowed. This resulted in under estimation of the asset; favorably this effect has been seen in the asset structure determinant found to have a negative relationship with current liability.

The explanatory variables don't have similar relationship between long term debt and short term debt, as for total debt, the result of the relationship is an averaged effect

result. From the above results except for structure of assets and liquidity, the remaining variables have different relationship for both long term debt and current debt.

Size and average profit are found to be significant determinants of leverage in terms of total debt and long term debt and liquidity is significant to determine both total debt and current liability ratios. Growth is not found to be a significant determinant of leverage in all proxies, but it was found to have a positive association with long-term debt. Structure of asset (tangibility) is determinant of long term debt ratio at 10% level of significance. It is found that fixed assets are important in obtaining long term debt than short term debt; so that the results show that, size, average profit and structure of assets have a strong determinant factor on long term debt than short term debt. This may be due to the fact that the companies use higher proportion of their debt in the form of current liability. Other facts such as the collateral requirements and the banks credit assessment basically rely upon the profitability and reputation of the company. This may have also limited the companies to access for long term debts and even for more short term bank loans, as the major source of the current liability represents other liabilities such as accruals.

Liquidity shows for strong significant determinant factor on current liability ratio than for long term debt ratio (which is insignificant), as a result the total debt ratio is influenced by liquidity. This may be as a result of liquidity is related to short term obligation of the company, which directly qualifies for current liability, so that, if the firm is possessing higher liquidity, it will have higher liquid assets on hand to cover its working capital and operation. This is in line with pecking order theory, where firms finance their activity following the financing pattern of pecking order.

The regression beta coefficient results for total debt ratio are all consistent to pecking order theory and all variables except growth and liquidity are found to determine long term leverage, while the results for current liability, size and structure of assets are contradictory to both pecking order theory and trade off theory. This may have been resulted as a result of the specific features of the companies, where they heavily rely on current liabilities which are accessed spontaneously, such as trade credit and accruals.

Another reason could also be, the under estimation of fixed assets (more collateral requirement) will lead the company to access short term debt, similarly as size and tangibility increased, the company will be able to generate more sales that can lead it to cover its short term requirements from its internal source.

The company difference in leverage is shown significant in long term debt than in short term debt. This shows the short term debt of the companies is on similar mood, while there is a significant difference among companies in long term debt. The beta coefficient of the company dummy variable shows that a one unit changes in the total debt ratio of the companies which have more than 30% total debt leads to 0.44 change in total debt of the companies which have less than 30% total debt ratio.

This result is due as a result of the significant difference among the long term debt ratio of the companies. 80% of the companies have more than 30% leverage ratio.80% of the companies, their major proportion of the total debt is current liability. Because there is no significant difference in current liability proportion among the companies, the result confirms that the difference in total debt is as a result of difference in long term debt among companies. Generally, the results of this study seem to support the pecking order hypothesis for both total debt and long term debts.

## 5.2 RECOMMENDATIONS

The issue of financial structure is an important strategic financing decision that firms have to make. Clearly, the pecking order theory appears to dominate the capital structure of the companies under study. Firm's financial structure can be affected by both internal and external factors. Under this study only internal factors have been considered. The analysis revealed that the output of the explanatory variables relationship with leverage is consistent to pecking order theory and other empirical studies. Based on the findings of the study mentioned earlier, the following policy recommendations are forwarded:

- It has been found that, the companies majorly use short term debt to finance their assets and less size firms have accounted for less liquidity, as a result they should

use a matching approach strategy to finance their assets. The life of the asset to be financed and the maturity of the loan should be matched. This implies that the earnings of the long term asset should cover the obligation for long term debt. Risk associated with payment of obligation will not exist unlike to short term debts.

- Firms should give emphasis to the facilitation of owner's capital and retained earnings. Because this helps to create a strong base for further debt borrowings and venture capital, as a result the firm's value will be maximized.
- Firms should use other alternative sources of finance such as leasing. Leasing is an advantageous source of finance, where companies are not required to pay the full amount once and it has also a tax deductible rent expense. It is off balance sheet account; hence, it will not limit to further borrow additional finance from financial institutions.
- Management of the companies should strive to make a wise and prudent financial mix, taking into consideration the risk and return tradeoff of the financial assets.
- Policy makers should give emphasis to the development of financial system to enable financial institutions to provide a variety and flexible products to lend the firms with less size and tangibility. A mechanism to incorporate such firms should be introduced.
- Development of financial institutions and financial market such as capital market is imperative. It helps firms to have a variety of financial products in a competitive environment. Firms will also access symmetric information as to the financial transactions. Policy makers should give prior consideration to the development of the financial system infrastructure.
- It is appropriate to establish financing schemes to assist manufacturing industries. Policy makers should design a way to treat firms as per their financial requirement and industry characteristics.

- Policy makers should create conducive legal environment of financial institutions that slam every way of corruption that discourages firms not to access bank loans.
- Policy makers should facilitate a favorable economic environment that increases the out flow of long term debt. Long term debt has a significant effect on the economy. It helps to encourage economic development through facilitation of industry expansion and innovation and transfer of new technology.
- **Future Research Implications**

  This study was made on analysis of financial structure of private limited companies in Mekelle, Tigray region. The study has focused only on the selected private limited companies. The other places of the region and other types of industries and other types of firms such as sole proprietorship, share companies, etc may have different situations. So, it is worth to study the analysis on financial structure of different types of companies on different industries in Tigray in particular, in Ethiopia in general to explore the financing mix, the financial obstacles and examine determinants of financial structure of the companies.

# BIBLIOGRAPHY


Aghion, P. and P., Bolton**. (**1992) **"*An Incomplete Contract Approach to Financial Contracting*".** Review of Economic Studies.

Alemayehu Geda (2006), ***The Structure and Performance of Ethiopia's Financial Sector in the Pre- and Post-Reform Period with a Special Focus on Banking,*** Research Paper No. 2006/112 World institute for development Economic, research, UNU-WIDER, United nations University.

Aleš Berk (2006). ***The Role of Capital Market in Determining Capital Structure Of Slovene Corporations,*** university of Ljubljana, Faculty of Economics Kardeljeva ploscad 17.

Aswath damodaran (1997), ***corporate finance, theory and practice***, Stern school of business, New York University, John wiley and sons Inc. New York.

Baxter, N. D. 1967. "***Leverage, the Risk of Ruin and the Cost of Capital***" Journal of Finance 22 (3).

Beck, T. and Levine R., (2002), "***Stock Markets, Banks and Growth***: Panel Evidence", NBER Working Paper Series No. 9082, Cambridge, Mass.: National Bureau of Economic Research.

Berger, A.N. and G.F. Udell. 1998. "***The economics of small business finance***: The roles of private equity and debt markets in the financial growth cycle". Journal of Banking and Finance, 22.

Bester, H., Hellwig, M., (1989), ***Moral hazard and equilibrium credit rationing***: an Overview of the issues.

Bhide, A. (1993), "***The Hidden Costs of Stock Market Liquidity***", Journal of Financial Economics, 34(1).

Botezat Anca-ramona and Stoichina Ionela,(2004)***,factors influencing decisions*** Regarding the financial structure of the enterprise

Boyd, J.H. and Prescott, E.C. (1986), "***Financial Intermediary-Coalitions***", Journal of Economic Theory, 38(2).

Boyd, J.H. and Smith, B.D. (1998), "***The Evolution of Debt and Equity Markets in Economic Development***", Journal of Economic Theory, 38(1).

Brian Gibson (2002), ***A Cluster Analysis Approach to Financial Structure in Small Firms in the United States***, Department of Accounting and Finance, University of Newcastle, Australia

Booth, L., V. Aivazian, A. Demirguc-Kunt, and M. Vojislav (2001), "***Capital Structures in Developing Countries***," *Journal of Finance*,

Brav, Omer (2005**): *How Does Access to Public Capital Market Affect Firms' Capital Structure? Wharton School, Job*** Market Paper.

Btrâncea Ioan, Larissa-Margareta, Cluj-Napoca, Moscviciov Andrei and Ardelean Victor (2006), ***decisions regarding the financial structure of companies,*** BabesBolya University.

Castanias, R. (1983). "***Bankruptcy risk and optimal capital structure***". The Journal of Finance, 38.

Chittenden, F., Hall, G. and Hutchinson (1996), ***markets and financial structure***: a review of issues and an empirical investigation. Small Business Economics.

Cornelia Starit,(2008),***Financial Structure, Investment, and Economic Development,*** A Flow of Funds Analysis of Emerging Countries

Chung kee H. (1993), ***Asset characteristics and corporate debt policy***: an empirical test, journal of business finance and Accounting 20.

Degryse, peter de goeij, peter kappert **(**2009), ***the impact of firm and industry Characteristics on small firms' capital structure: evidence from Dutch panel Data***, European banking center discussion paper no. 2009–03

Diamond, D.(1989), ***Reputation acquisition in debt markets***, Journal of Political Economy 97.

Demirguc-Kunt, Asli and Ross Levine (2000), "***Bank-Based and Market-Based Financial Systems:*** Cross-Country Comparisons" in Financial Structure and Economic Growth:

Demirguc-Kunt and Ross Levine *(*2001), ***A Cross-Country Comparison of Banks, Markets, and Development,*** *Eds.* Asli. Cambridge, MA: MIT Press.

Demirg¨u¸c-Kunt, A., Maksimovic, V. (2002), ***Funding growth in bank-based and market-based financial systems***: evidence from panel level data. Journal of Finance

Donald L.H and James L.M (1997), ***Statistical analysis***, for business and Economics

Esperança, J.P., P.M.G. Ana and A.G. Mohamed (2003). "***Corporate debt policy of Small firms: An empirical (re)examination***". Journal of Small Business and Enterprise Development

Francisco gallego and Norman loayza,(2000), ***financial structure in chile Macroeconomic developments and microeconomic effects**** central bank of Chile first draft:

Francesco Nucci, Alberto F. Pozzolo and Fabiano Schivardi (2005*),* ***is firm's Productivity related to its financial structure? Evidence from microeconomic data,,*** Banca d'Italia, Research Department, Italy.

Gerschenkron, A. (1962), ***Economic Backwardness in Historical Perspective***. A Book of Essays, Cambridge, MA: Harvard University Press.

Gujarati, D.N (1995)., ***Basic Econometrics***, 4th Edition, McGraw-Hill.

Hall, G.C., P.J. Hutchinson and N. Michaelas. (2004). "***Determinants of the capital structures of European SMEs***". Journal of Business Finance and Accounting,

Hennessy, A. Christopher and Toni M. Whited (2003). ***Debt Dynamics.*** Working Paper

Hans Degryse, Peter Degoeij, peter kappert(2009),***The impact of firm and industry characteristics on small firm's capital structure***: evidence from duch panel data.

Jean-Laurent (2002), ***Capital Structure Determinants*****:** An Empirical Study of French Companies in the Wine Industry VIVIANI ERFI University of Montpellier.

James C. Van Horne, (1998), ***financial management and policy***, 11th edition, USA

Jensen, M. C. (1986), "**Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers**," American Economic Review,

Jensen, M. and W., Meckling. (1976) **"*Theory of the Firm: Managerial Behavior, Agency Cost and Ownership Structure*",** Journal of Financial Economics.

Joaquim J. S. Ramalho and Jacinto Vidigal (2008), ***financial leverage decisions of micro small, medium and large firms,*** CEFAGE-UE , da Silva Universidade de Évor.

Joshua Abor(2008) ***Determinants of the Capital Structure of Ghanaian Firms,*** Department of Finance, University of Ghana Business School Legon.

Justin Yifu Lin and Xifang Sun Ye Jiang,(2009), ***Toward a Theory of Optimal Structure,*** Development Economics vice Presidency, Policy Research Working Paper 5038, the World Bank.

Keshar J. Baral, PhD, (2004**), *Determinants of Capital Structure: A Case Study of Listed Companies of Nepal,*** the Journal of Nepalese Business Studies Vol. I

Kraus, A. and R.H. Litzenberger (1973), "***A State Preference Model of Optimal Financial Leverage,***" Journal of Finance.

Lahcen Achy and Jawad El Otmani(2008), ***Understanding financial structure of non listed firms in MENA, Panel data approach applied to Moroccan firms,*** Economic Research Forum: Annual Conference.

Laurent Weill, (2001), ***Determinants of Leverage and Access to Credit****:* Evidence on western and Eastern Europe countries, *LARGE,* University Robert, Schuman Institute d'Etudes Politiques.

Levine, R.(1997)."***Financial Development and Economic Growth***: Views And Agenda", Journal of Economic Literature,35.

Love, I. and N. Mylenko(2003), ***Credit reporting and financing constraints***. World Bank Policy Research Paper No. 3142.

Martin, John D. and Others (1988), ***the theory of Finance***, Evidence and Application, Chicago: the Dryden pres.

Mathew lamport, wassila.B.hosany and Ushad A. Subadar,(2004),***theories of capital Structure*****:** evidence from investment and non-investment firms listed on the stock exchange of Mauritius affiliation: university of Mauritius,

Mayer, C., (1988), ***new issues in corporate finance***, European Economic Review

Merton, R.C., and Z. Bodie (1995), ***A Conceptual Framework for Analyzing the Financial Environment,*** a Functional Perspective. Boston, MA: Harvard Business School Press.

Mihaela-brânduşa Tudose ***(___), the management of the enterprise's financial Structure*** *Lecture* manual, University of Iasi.

Michaelas, N., F. Chittenden and P. Poutziouris (1999). ***Financial Policy and Capital Structure Choice in U.K. SMEs***: Empirical Evidence from Company Panel Data. *Small business economics*.

Morck, R. and M. Nakamura (1999)**. "*Banks and corporate control in Japan*."** Journal of Finance**.**

Myers, S. C**.** (1977**) "*The Determinants of Corporate Borrowing*".** Journal of Financial Economics.

Myers, S. C. and N. S., Majiluf **(**1984) **"*Corporate Financing and Investment Decision when Firms Have Information That Investors Do Not Have*".** Journal of Financial Economics.

Ozkan, A., (2001). ***Determinants of Capital Structure and Adjustment to Long Run Target:*** Evidence from UK Company Panel Data. Journal of Business Finance & Accounting**.**

Pagano, M., (1993)**. "*Financial markets and growth. An overview*."** European Economic Review 39

Patrick Hutchinson and Nicos michaelas,( 1998),***the determinants of capital Structure for micro, small and medium-sized enterprises,*** department of Accounting and financial management university of New England.

Philip arestis (2005), ***financial structure and economic growth,*** Cambridge centre for economic and public policy, working paper no. 06/05 , Department of Land Economy University of Cambridge.

Rajan, R., (1992)**. "*Insiders and outsiders: The choice between informed and arms length debt*."** Journal of Finance.

Rajan, R.G. and Zingales, L., 1995. "***What Do We Know About Capital Structure****? Some Evidence from International Data",* the Journal of Finance 50.

Rajan, R.G. and L. Zingales. 1998. ***Financial dependence and growth***. American Economic Review, 88(3).

Reinhard H. Schmidt and Aneta Hryckiewicz (2006), ***Determinants of Leverage and Access to Credit:*** Evidence on Western and Eastern Europe countries, Goethe-University Frankfurt

Robert C. Merton and Zvi Bodie **(**1995), ***A conceptual framework for analyzing the Financial system,*** A Functional Perspective, Harvard Business School Press.

Samantala Hettihewa (1997**), *Financial management: an Introduction*:** oxford University Press, New York, USA.

Singh, A. (1997), "***Stock Markets, Financial Liberalization and Economic Development***", Economic Journal.

Sogorb Mira (2008), ***How SME uniqueness affects capital structure***: Evidence from 1994-1998 Spanish data panel, small business economics journal.

Stephen A. Ross, Randolph W.Westerfield and Bradford D.Jordan (2001), ***Essentials of Corporate Finance***, 3rd edition, McGraw Hill, Irwin, New York,

Stiglitz, J.E. (1985), ***Credit Markets and Control of Capital, Journal of Money***, Credit and Banking, Vol. 17,

Stijn Claessens and Konstantinos Tzioumis (2006)**, *Measuring firms' acces to finance,*** World Bank**.**

Storey, D.J. (1994), "***The role of legal status in influencing bank financing and new firm growth***". Applied Economics, 26.

Stulz, R. (1990), "***Managerial discretion and optimal financial policies***". Journal of Financial Economics, 26.

Suhaila Mat Kila and Wan Mansor Wan Mahmood*(2008)*, ***Capital Structure and Firm Characteristics: Some Evidence from Malaysian Companies***, Department of Finance, Faculty of Business & Management, University Technology MARA Terengganu, Malaysia

Titman, S. and Wessels, R. (1988) '***The Determinants of Capital Structure Choice*"**, Journal of Finance.

Thorsten beck, Aslh Demirgu,c-kunt and Vojislav Maksimovic (2002), ***financing Patterns around the world the role of institutions*** policy research working paper 2905, the World Bank development research group finance.

Thorsten Beck and Ross Levine (2000), ***External Dependence and Industry Growth,*** Does Financial Structure Matter?

USAID (2009**),** ***Access to credit in East African countries,*** shared issues and Priority for reform, survey report in East African countries.

Warner, J.B.1976. "***Bankruptcy costs: Some evidence***", Journal of Finance.

World Bank (2001), ***Finance for Growth***: Policy Choices in a Volatile World, Oxford: Oxford University Press

_____**(**2010),Trade and Industry Bureau, Investment Promotion Core Process, Tigray Region, Mekelle, Ethiopia.

_____(2009), Tigray bureau of Finance and economic Development report, Mekelle. Tigray, Ethiopia

..... (2007), U.S International trade commission, Investigation No. 332-477, USITC Publication 3914.

**WEBSITES**

www.wikipedia.org

http://www.investorwords.com

http://www.businessdictionary.com

http://financial-dictionary.thefreedictionary.com/

http://tutor2u.net/business/finance/

# Appendix- A

**Questionnaire**

**for**

**Finance managers of private limited manufacturing companies (with special reference to selected units in Mekelle zone) for conducting Analysis on Financial structure**

This is an open ended and closed ended question questionnaire prepared for Finance managers (respondents), to extract necessary and supporting information for analyzing the financial structure of Private limited manufacturing companies with special reference in Mekelle Zone of Tigray to analyze the characteristics and challenges the company's are facing in order to recommend possible course of action. This questionnaire is developed for the research to be conducted for the partial fulfillment of the award of degree of Master of Science in finance and investment, so that your response is kept confidential and will only be used for academic purpose.

**INTRODUCTION**: Mark '✓' for the correct answer for the closed ended questions and use the space provided for the open ended questions.

1. Does the company have any problem related in marketing its product?
   A. Yes ☐ B. No ☐
2. If your answer for Quest. No 1 is 'Yes', How do you think this is affecting the financial structure of your company?

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.....

.....

3. How do you rate government's support to solve market problems in which your company is facing?
   A. Very good ☐ B. Good ☐ C. Poor ☐ D. No idea ☐

4. How inflation affected the leverage of your company for the last five years?

   A. Positively ☐ B. Negatively ☐ C. No change ☐

5. If your answer for Quest. No 4 is inflation affected the leverage of your Company 'negatively', what solutions you have used to solve the problem?

.....

.....

.....

.....

6. How do you rate the effect of different taxes on the financial structure of your company?

   A. Leverage increased ☐ B. Leverage decreased ☐ C. No change ☐

7. Do you have an understanding on the benefit of tax shield on debt?

   A. Yes ☐ B. No ☐

8. If your answer for Quest. No 7 is 'yes', what is your strategy of financing mix?

.....

.....

.....

9. Is there any internal factors affecting the financial structure your company?

   A. Yes ☐ B. No ☐

10. If your answer for Quest. No 9 is 'Yes', what are these factors?

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.....

11. Could you please rank your pattern of finance from most accessible to least accessible? Rank the following patterns of finance from most and easily accessible= 1 to least accessible= 4

- Debt ☐
- Equity ☐
- Operational Finance ☐
- Informal credit(Family and others) ☐

12. How do you rank the size of finance your company is accessing from different institution?

A. Adequate ☐ B. Average ☐ C. Inadequate ☐ D. No idea ☐

13. If your answer for Quest. No 12 is 'inadequate', why?

.....

.....

.....

14. How do you evaluate the services provided by financial intermediaries?

A. Very good ☐ B. Good ☐ C. Satisfactory ☐ D. Poor ☐

15. How do you rate the financial products provided by the intermediaries?

A. Diversified ☐ B. Limited ☐ C. Very limited ☐

16. Which financial intermediary is satisfying your needs?

A. Banks ☐ B. Microfinance C. Saving and credit Cooperatives ☐

D. Iquib ☐ E. If any other please specify.....

17. How do you evaluate the financial policy of the country?

A. Restrictive ☐ B. Flexible ☐ C. Moderate ☐ D. No idea ☐

18. Are the banking regulations are friendly?

A. Yes ☐ B. No ☐ C. No Idea ☐

19. If your answer for Quest. No 18 is 'No', what are the challenging regulations That your company is facing?

.....

.....

.....

20. What are the collateral requirements expressed in terms of percentage of the loan to be borrowed is required to borrow money?

A. More than 100% ☐ B. 75%- 100% ☐ C. 50% -74% ☐ D. Less than 50% ☐

21. Do the requirements and procedures of accessing finance are convenient for your company?

A. Yes ☐ B. No ☐

22. If your answer for Quest. No 21 is 'No' why?

.....

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.....

23. What type of finance your company uses to finance its Working capital?

A. Short term Loan ☐ B. Long term loan ☐

C. Spontaneous (trade Credit) ☐ D. Family or own capital ☐

E. Retained earnings ☐ F. If any other.....

24. How does your company finance long term assets?

A. Short term loan ☐ B. Long term loan ☐ C. Family or own capital ☐

D. Leasing ☐ E. trade credit ☐ F. Retained earnings ☐

G. if any other please specify.....

25. How does your company finance emergency financial needs?

A. Loans ☐ B. Equity ☐ C. Own capital ☐

D. Retained earnings ☐ E. if any other please specify.....

26. What type of finance does your company use to finance a project or capital expenditure?

A. Short term loan ☐ B. long term loan ☐ C. Equity ☐

D. Informal credit ☐ E. if any other please specify.....

27. What financial decision mechanisms does your company apply to finance the Operations of the company?

A. Debt driven ☐ B. Equity driven ☐ C. Operational Finance driven ☐

D. if any other please specify.....

28. Does your company use lease financing as an alternative source of finance?

A. Yes ☐ B. No ☐

29. If your answer for Quest. No 28 is 'No' what is the reason?

.....

.....

.....

30. Is the legal environment is investor friendly?

A. Yes ☐ B. No ☐ C. No idea ☐

31. If the answer for Quest. No 30 is 'No', so what are the challenging major legal frameworks that is affecting the financial structure of your company?

.....

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.....

32. How do you evaluate the interest rate charged on different sources of finance?

A. High ☐ B. Average ☐ C. Low ☐

33. If your answer for Quest. No 32 is 'High', how this is limiting your company in accessing finance?

.....

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34. Is there any corruption in financial institutions in accessing to finance?

A. Yes ☐ B. No ☐ C. No idea ☐

35. If your answer for Quest. No 34 is 'Yes', how this is affecting your company in accessing to finance?

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36. What are the general financing obstacles your company is facing in accessing to finance?

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37. How your company is solving the offer mentioned obstacles? If any.

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38. Do you have any additional comment on the financial structure decision and Financial environment?

……

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***Thank you for your Cooperation!***

# APPENDEX-B

## SAMPLE FRAME: LIST OF PRIVATE LIMITTED COMPANIES IN MEKELLE ZONE

| S.NO | Name of Company | Location |
|---|---|---|
| 1 | Abergelle international | Mekelle |
| 2 | Adigrat-Quha Matenela Factory | Quha |
| 3 | Aznash detergent and soap factory | Mekelle |
| 4 | Buruh Tesfa Plastic products factory | Mekelle |
| 5 | Etig Gravel Producer | Mekelle |
| 6 | Dello Gravel and Blocket factory | Mekelle |
| 7 | Desta Alcohol and liquares Factroy | Mekelle |
| 8 | Diplomacy Flour factory | Mekelle |
| 9 | E-food safe PLC | Mekelle |
| 10 | Emba Hade emni Methhan Gravel producer | Quha |
| 11 | Fresiweat Industry | Mekelle |
| 12 | Harena Stone and Bloket Producer | Mekelle |
| 13 | Lusi Blocket and Gravel manufacturing | Mekelle |
| 14 | Mesebo Building materials factory | Mekelle |
| 15 | Mesfin Industrial engineering | Mekelle |
| 16 | National Geo textile | Mekelle |
| 17 | Rohobet Plastic Producer | Quha |
| 18 | Romanat Flexible packaging | Mekelle |
| 19 | Romanat Flour factory | Mekelle |
| 20 | Romanat Gravel and cement products factory | Mekelle |
| 21 | Dalul Gravel and cement Products factory | Quha |
| 22 | Ethio Fana brikes factory | Mekelle |
| 23 | Sofi chemical manufacturing | Mekelle |
| 24 | Selam Matenel and Terazo Factory | Mekelle |
| 25 | Shewi plastic and plastic products | Mekelle |

# APPENDEX-C

## AUXILIARY REGRESSION RESULTS TO TEST MULTICOLLINEARITY

```
. reg size soa avprof growth liq compdummy
```

| Source | SS | df | MS | Number of obs = | 30 |
|---|---|---|---|---|---|
| | | | | F( 5, 24) = | 4.40 |
| Model | 13.1988984 | 5 | 2.63977968 | Prob > F = | 0.0055 |
| Residual | 14.4125834 | 24 | .600524307 | R-squared = | 0.4780 |
| | | | | Adj R-squared = | 0.3693 |
| Total | 27.6114818 | 29 | .952120061 | Root MSE = | .77494 |

| size | Coef. | Std. Err. | t | P>\|t\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| soa | 1.330385 | .8977382 | 1.48 | 0.151 | -.5224553 | 3.183226 |
| avprof | 2.761447 | 1.822451 | 1.52 | 0.143 | -.9999077 | 6.522802 |
| growth | .2476238 | .2823117 | 0.88 | 0.389 | -.3350388 | .8302865 |
| liq | .5970192 | .1572737 | 3.80 | 0.001 | .2724222 | .9216162 |
| compdummy | -.2364021 | .3583188 | -0.66 | 0.516 | -.9759359 | .5031316 |
| _cons | 6.308846 | .6024972 | 10.47 | 0.000 | 5.065353 | 7.552339 |

```
. reg soa size avprof growth liq compdummy
```

| Source | SS | df | MS | Number of obs = | 30 |
|---|---|---|---|---|---|
| | | | | F( 5, 24) = | 3.03 |
| Model | .431527741 | 5 | .086305548 | Prob > F = | 0.0292 |
| Residual | .682661603 | 24 | .028444233 | R-squared = | 0.3873 |
| | | | | Adj R-squared = | 0.2597 |
| Total | 1.11418934 | 29 | .038420322 | Root MSE = | .16865 |

| soa | Coef. | Std. Err. | t | P>\|t\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| size | .0630146 | .042522 | 1.48 | 0.151 | -.0247464 | .1507756 |
| avprof | -.1554321 | .4139565 | -0.38 | 0.711 | -1.009796 | .698932 |
| growth | .0063963 | .0624047 | 0.10 | 0.919 | -.1224007 | .1351933 |
| liq | -.1152928 | .0363481 | -3.17 | 0.004 | -.1903116 | -.0402741 |
| compdummy | .0722523 | .0772928 | 0.93 | 0.359 | -.0872721 | .2317767 |
| _cons | .0634568 | .3091556 | 0.21 | 0.839 | -.574609 | .7015227 |

```
. reg avprof size soa growth liq compdummy
```

| Source | SS | df | MS | Number of obs = | 30 |
|---|---|---|---|---|---|
| | | | | F( 5, 24) = | 0.84 |
| Model | .029027671 | 5 | .005805534 | Prob > F = | 0.5318 |
| Residual | .165021746 | 24 | .006875906 | R-squared = | 0.1496 |
| | | | | Adj R-squared = | -0.0276 |
| Total | .194049417 | 29 | .006691359 | Root MSE = | .08292 |

| avprof | Coef. | Std. Err. | t | P>\|t\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| size | .0316181 | .0208668 | 1.52 | 0.143 | -.0114488 | .074685 |
| soa | -.037573 | .1000669 | -0.38 | 0.711 | -.2441009 | .1689548 |
| growth | -.022561 | .0303413 | -0.74 | 0.464 | -.0851824 | .0400604 |
| liq | -.0065922 | .0212473 | -0.31 | 0.759 | -.0504444 | .03726 |
| compdummy | .0468842 | .0374853 | 1.25 | 0.223 | -.0304815 | .12425 |
| _cons | -.216059 | .145601 | -1.48 | 0.151 | -.5165647 | .0844466 |

```
. reg growth size soa avprof liq compdummy
```

| Source | SS | df | MS | | |
|---|---|---|---|---|---|
| Model | .479245643 | 5 | .095849129 | Number of obs = | 30 |
| Residual | 7.30078335 | 24 | .304199306 | F( 5, 24) = | 0.32 |
| | | | | Prob > F = | 0.8990 |
| Total | 7.78002899 | 29 | .268276862 | R-squared = | 0.0616 |
| | | | | Adj R-squared = | -0.1339 |
| | | | | Root MSE = | .55154 |

| growth | Coef. | Std. Err. | t | P>\|t\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| size | .1254354 | .1430067 | 0.88 | 0.389 | -.169716 | .4205867 |
| soa | .068406 | .6673925 | 0.10 | 0.919 | -1.309024 | 1.445837 |
| avprof | -.9981303 | 1.342341 | -0.74 | 0.464 | -3.768585 | 1.772324 |
| liq | -.0842064 | .1405605 | -0.60 | 0.555 | -.3743091 | .2058962 |
| compdummy | .1094072 | .2563567 | 0.43 | 0.673 | -.4196871 | .6385015 |
| _cons | -.6324097 | 1.003638 | -0.63 | 0.535 | -2.703816 | 1.438997 |

```
. reg liq size soa avprof growth compdummy
```

| Source | SS | df | MS | | |
|---|---|---|---|---|---|
| Model | 22.9366818 | 5 | 4.58733635 | Number of obs = | 30 |
| Residual | 15.1699855 | 24 | .632082727 | F( 5, 24) = | 7.26 |
| | | | | Prob > F = | 0.0003 |
| Total | 38.1066672 | 29 | 1.31402301 | R-squared = | 0.6019 |
| | | | | Adj R-squared = | 0.5190 |
| | | | | Root MSE = | .79504 |

| liq | Coef. | Std. Err. | t | P>\|t\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| size | .6283934 | .1655387 | 3.80 | 0.001 | .2867384 | .9700484 |
| soa | -2.562017 | .8077204 | -3.17 | 0.004 | -4.22907 | -.894964 |
| avprof | -.6060004 | 1.953202 | -0.31 | 0.759 | -4.637211 | 3.42521 |
| growth | -.1749689 | .2920647 | -0.60 | 0.555 | -.7777609 | .427823 |
| compdummy | -.2200689 | .3682019 | -0.60 | 0.556 | -.9800003 | .5398624 |
| _cons | -2.114687 | 1.393305 | -1.52 | 0.142 | -4.990327 | .7609533 |

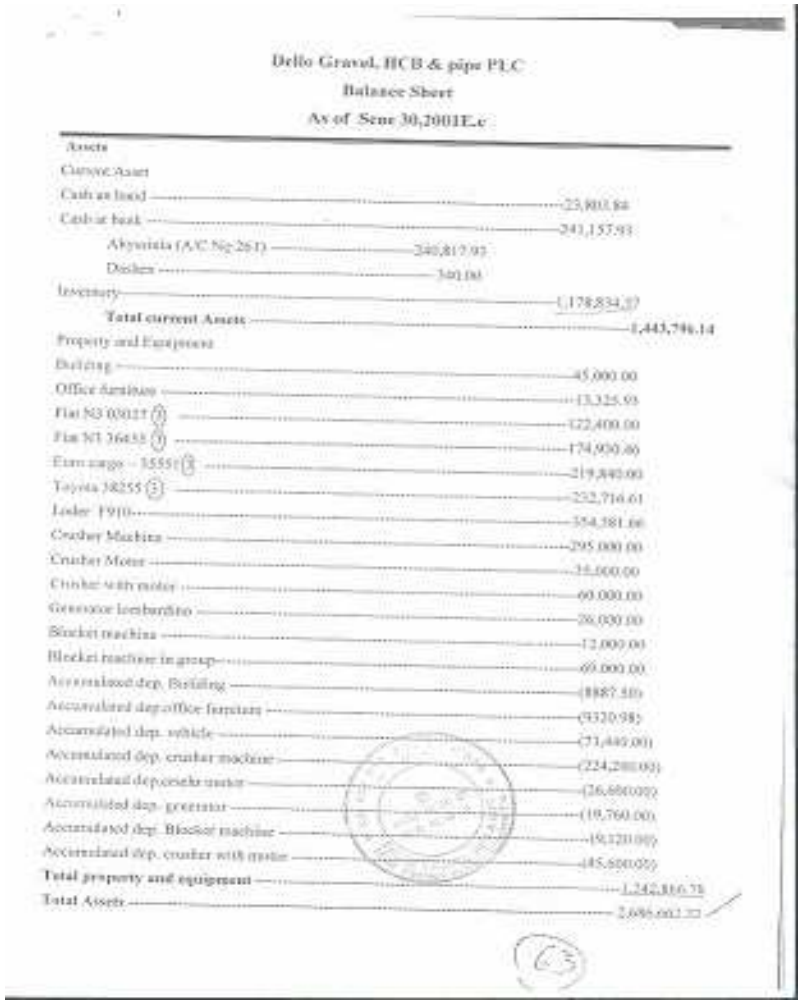
```
. reg compdummy size soa avprof growth liq
```

| Source | SS | df | MS | | |
|---|---|---|---|---|---|
| Model | 1.27272675 | 5 | .25454535 | Number of obs = | 30 |
| Residual | 4.59393992 | 24 | .191414163 | F( 5, 24) = | 1.33 |
| | | | | Prob > F = | 0.2854 |
| Total | 5.86666667 | 29 | .202298851 | R-squared = | 0.2169 |
| | | | | Adj R-squared = | 0.0538 |
| | | | | Root MSE = | .43751 |

| compdummy | Coef. | Std. Err. | t | P>\|t\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| size | -.075352 | .1142124 | -0.66 | 0.516 | -.3110748 | .1603707 |
| soa | .4862186 | .520138 | 0.93 | 0.359 | -.5872935 | 1.559731 |
| avprof | 1.305182 | 1.04353 | 1.25 | 0.223 | -.8485573 | 3.458921 |
| growth | .0688433 | .1613097 | 0.43 | 0.673 | -.2640836 | .4017702 |
| liq | -.0666437 | .1115029 | -0.60 | 0.556 | -.2967743 | .163487 |
| _cons | 1.128525 | .7689253 | 1.47 | 0.155 | -.4584591 | 2.715508 |

```
.
```

# APPENDEX-D
# FINANCIAL STATEMENTS

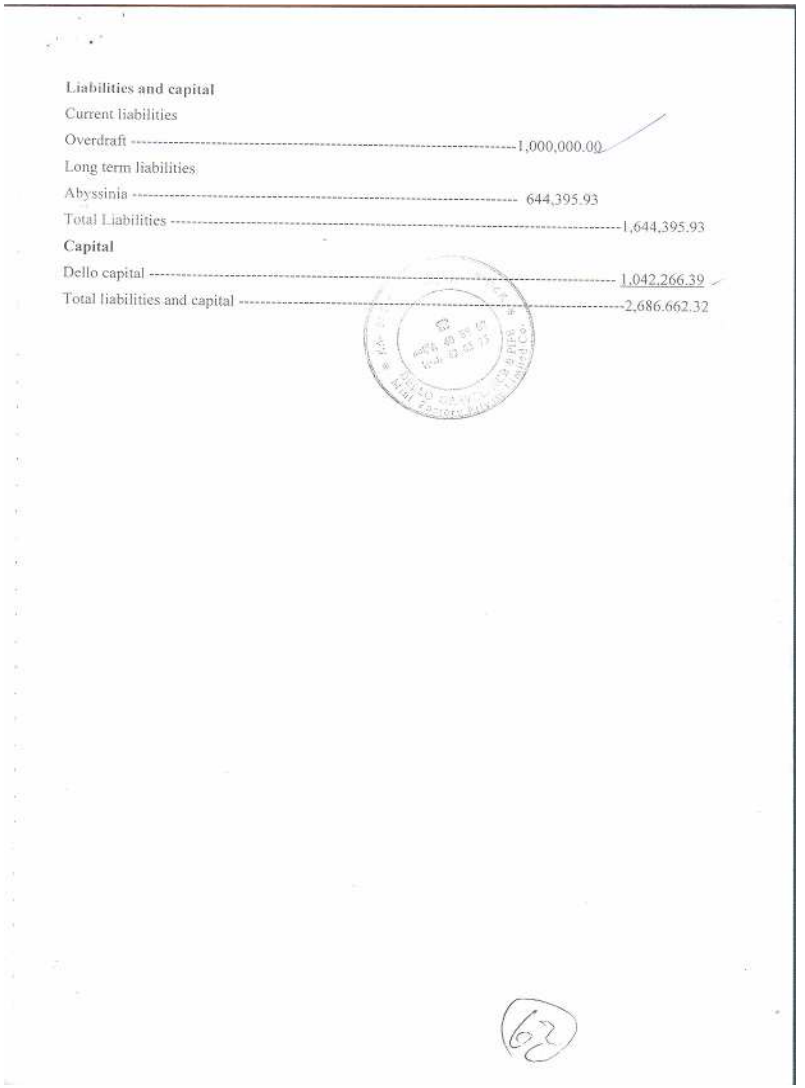


**Dello Gravel, HCB & pipe PLC**

**Balance Sheet**

**As of Sene 30,2001E.c**

| | | |
|---|---|---|
| **Assets** | | |
| Current Asset | | |
| Cash on hand | | 23,803.84 |
| Cash at bank | | 241,157.93 |
| Abyssinia (A/C No 261) | 240,817.93 | |
| Dashen | 340.00 | |
| Inventory | | 1,178,834.37 |
| **Total current Assets** | | **1,443,796.14** |
| Property and Equipment | | |
| Building | | 45,000.00 |
| Office furniture | | 13,325.93 |
| Flat NO 03027 (1) | | 122,400.00 |
| Flat NO 36433 (1) | | 174,900.00 |
| Exam cargo – 35551 (2) | | 219,840.00 |
| Toyota 38255 (3) | | 252,716.61 |
| Loder 1910 | | 354,581.69 |
| Crusher Machine | | 295,000.00 |
| Crusher Motor | | 35,000.00 |
| Crusher with motor | | 60,000.00 |
| Generator lombardini | | 26,000.00 |
| Blocker machine | | 12,000.00 |
| Blocker machine in group | | 69,000.00 |
| Accumulated dep. Building | | (8887.50) |
| Accumulated dep office furniture | | (9320.98) |
| Accumulated dep. vehicle | | (71,440.00) |
| Accumulated dep. crusher machine | | (224,280.00) |
| Accumulated dep.crusher motor | | (26,600.00) |
| Accumulated dep. generator | | (19,760.00) |
| Accumulated dep. Blocker machine | | (9,120.00) |
| Accumulated dep. crusher with motor | | (45,600.00) |
| **Total property and equipment** | | 1,242,816.78 |
| **Total Assets** | | 2,686,662.32 |



| | | |
|---|---|---|
| **Liabilities and capital** | | |
| Current liabilities | | |
| Overdraft | | 1,000,000.00 |
| Long term liabilities | | |
| Abyssinia | 644,395.93 | |
| Total Liabilities | | 1,644,395.93 |
| **Capital** | | |
| Dello capital | | 1,042,266.39 |
| Total liabilities and capital | | 2,686,662.32 |

Dello Gravel, HCB & pipe PLC

Income Statement

For the year ended Sene 30,2003 E.c

| | | |
|---|---|---|
| Sales | | 1,708,234.64 |
| Beginning hande 1,2000 E.C | 482,532.00 | |
| Purchase | 1,123,275.64 | |
| Less: ending inventory | (1,178,834.32) | (825,977.23) |
| Gross profit | | 1,261,260.77 |
| Operating expense | | |
| Wages | 267,682.47 | |
| Salary | 110,480.00 | |
| Rent | 12,000.00 | |
| Interest | 156,226.84 | |
| Spare parts | 20,654.47 | |
| Tyre and tubes | 45,913.26 | |
| Electrical material &w.shop | 33,095.84 | |
| Stationary | 758.65 | |
| Telephone | 12,705.50 | |
| Water | 5,613.22 | |
| Electric | 89,098.17 | |
| Insurance | 13,770.87 | |
| Depreciation | 114,595.19 | |
| Fuel and lubricant | 201,369.86 | |
| Registration & municipality | 12,034.20 | |
| Loading and unloading | 28,172.25 | |
| Quality and standards | 2,458.87 | |
| Mining | 15,000.18 | |
| Maintenance & repairs | 29,852.74 | |
| Medical for labor | 560.08 | |
| Total operating expense | | (1,185,349.72) |
| Profit before tax | | 95,911.05 |
| Tax:-95,911.05×30% | | 28,773.32 |
| Less:-withholding | | (2038.36) |
| Payable tax | | 26,737.96 |

MESFIN INDUSTRIAL ENGINEERING PLC
Balance Sheet - as at 30th June

Currency - Birr

EXHIBIT "A"

| ASSETS | NOTE | 2009 | 2008 | 2007 | 2006 | 2005 |
|---|---|---|---|---|---|---|
| | | BIRR | BIRR | BIRR | BIRR | BIRR |
| Tangible fixed assets-net | SCHEDULE "A" | 57,029,888 | 57,242,534 | 48,337,093 | 44,098,585 | 46,015,410 |
| Lease hold land | 2.4.3 | 6,830,611 | 6,877,564 | 3,774,717 | 2,908,052 | - |
| Investment in associated companie | 3 | 1,400,000 | 1,400,000 | 1,380,000 | 1,280,000 | 1,380,000 |
| Long term utility deposits | 4 | 179,899 | 179,899 | 168,399 | 168,399 | 168,399 |
| Current assets | | | | | | |
| Stock in trade | 5 | 128,957,492 | 135,836,472 | 96,122,798 | 90,980,030 | 95,206,154 |
| Trade debtors unsecured but considered good | 6 | 59,038,251 | 23,570,698 | 65,482,096 | 32,188,810 | 23,261,348 |
| Due from associates | 7 | 23,594,940 | 39,442,302 | 42,007,453 | 65,459,244 | 35,189,613 |
| Employees receivable | 8 | 2,353,926 | 2,179,751 | 821,840 | 1,207,577 | 966,008 |
| Other receivable | 9 | 4,199,800 | 1,506,113 | 904,599 | 1,078,171 | 3,594,296 |
| Refundable Tax | 9 | - | 2,968,964 | - | - | 1,075,008 |
| Unbilled Receivables | 10 | 18,271,235 | 13,909,832 | | | |
| Deposits against letters of Guarantee | 11 | 1,083,330 | | 981,139 | 19,233,595 | 1,892,734 |
| Cash and bank | 12 | 7,350,909 | 9,019,227 | 4,587,026 | 2,889,947 | 2,998,661 |
| Total current assets | | 248,536,390 | 228,466,456 | 203,787,436 | 203,339,145 | 154,159,268 |
| TOTAL ASSETS | | 313,229,288 | 293,193,253 | 255,457,993 | 251,845,981 | 179,743,019 |
| LIABILITIES | | | | | | |
| Shareholders' equity: | | | | | | |
| Authorized Capital | | | | | | |
| 500,000 Ordinary shares of Birr 200 each 2004 & 5,000,000 Ordinary Shares of Birr 200 each 2005 | | 100,000,000 | 100,000,000 | 100,000,000 | 100,000,000 | 100,000,000 |
| Issued, subscribed and paid up capital | | | | | | |
| 500,000 Ordinary shares of Birr 200 each 2004 & 5,000,000 Ordinary Shares of Birr 200 each 2005 | EXHIBIT "D" | 100,000,000 | 100,000,000 | 100,000,000 | 100,000,000 | 100,000,000 |
| Legal reserve | EXHIBIT "D" | 6,501,768 | 4,951,276 | 4,275,160 | 3,100,770 | 2,000,000 |
| Unappropriated profit | | 125,969,943 | 112,355,492 | 99,281,661 | 79,320,756 | 56,696,153 |
| Total shareholdeers' equity | | 331,471,710 | 217,306,767 | 203,556,821 | 182,511,966 | 158,696,153 |
| Current liabilities: | | | | | | |
| Due to bank-Secured overdraft | 16 | 36,247,373 | 29,909,199 | - | 22,730,294 | 8,337,299 |
| Accounts payable (Trade creditors) | 17.1 | 18,704,581 | 17,256,450 | 33,261,902 | 20,905,968 | 1,899,949 |
| Due to associates | 17.2 | - | 7,712,482 | - | - | - |
| Accrued & deferals | 17.3 | 2,306,784 | 4,984,915 | 1,992,553 | 3,966,924 | 1,586,229 |
| TOT | 17.4 | - | - | - | - | 117,145 |
| Other credit balances | 17.6 +17.7 | 1,380,908 | 784,827 | 4,949,515 | 1,238,368 | 1,886,327 |
| VAT, Profit tax and personal taxes payable | 18 | 14,550,538 | 4,545,294 | 10,126,556 | 11,306,208 | 7,424,853 |
| Total current liabilities: | | 73,190,184 | 65,343,976 | 55,049,529 | 80,279,763 | 21,845,801 |
| Other liabilities: | | | | | | |
| Lease hold payable | 2.4.3 | 5,600,329 | 5,737,565 | 3,852,913 | 3,053,784 | |
| Medium term loan | 20 | 2,965,233 | 4,975,744 | | | |
| Total Other liabilities: | | 8,565,562 | 10,633,410 | 3,852,913 | 3,053,784 | - |
| TOTAL SHARE HOLDERS' EQUITY AND LIABILITIES | | 313,229,288 | 293,193,253 | 255,457,993 | 251,845,981 | 179,743,019 |
| | | (0.01) | 0.00 | (0.00) | 0 | 0 |

"THE ACCOMPANYING NOTES ARE AN INTEGRAL PART OF THIS STATEMENT"

FINANCE MANAGER | DY. GENERAL MANAGER-services | GENERAL MANAGER

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MESFIN INDUSTRIAL ENGINEERING PLC
Profit and Loss Statement for three years ended June 30

Currency: Birr

EXHIBIT "B"

| | Notes | 2009 | 2008 | 2007 | 2006 | 2005 |
|---|---|---|---|---|---|---|
| Sales | 21 | 170,329,510 | 167,761,775 | 197,855,859 | 153,587,057 | 49,755,735 |
| Cost of Sales | 23 | 138,375,592 | 135,962,654 | 150,281,026 | 109,806,707 | 42,367,461 |
| Gross Profit | | 31,953,958 | 31,799,121 | 47,573,833 | 43,781,350 | 7,388,274 |
| | | 19% | 19% | 24% | 29% | 15% |
| Other Income | | | | | | |
| Dividend | | 248,400 | 248,400 | - | 248,400 | 62,100 |
| Others | 22 | 1,520,394 | 1,424,746 | 3,070,169 | 1,263,852 | 1,076,316 |
| | | 1,768,794 | 1,673,146 | 3,070,169 | 1,512,252 | 1,138,416 |
| | | 33,722,752 | 33,472,267 | 50,644,102 | 45,293,612 | 8,526,692 |
| Operating Expenses | | | | | | |
| General & Administrative | 24 | 14,075,273 | 10,077,626 | 8,345,508 | 7,920,882 | 6,416,759 |
| Selling & distribution | 26 | 1,131,850 | 1,335,544 | 1,484,227 | 995,046 | 701,813 |
| | | 15,207,123 | 12,013,169 | 9,832,735 | 8,915,928 | 7,118,570 |
| | | 5% | 7% | 5% | 6% | 14% |
| Operating Profit | | 18,515,629 | 21,459,097 | 40,811,366 | 36,377,684 | 1,388,122 |
| | | 11% | 13% | 21% | 24% | 3% |
| Head office expense | 25 | 656,358 | 618,164 | 1,791,355 | 721,892 | 375,892 |
| Consultancy fee | 25 | 0 | 0 | 5,109,616 | 2,358,644 | |
| Business Development | 25 | | 0 | 687,364 | 123,117 | |
| Auditors' fee | 25 | 48,500 | 40,500 | 39,500 | 33,000 | 29,500 |
| Employees' Canteen | 25 | 131,399 | 98,340 | 951,409 | 264,847 | |
| Sport Expense | 25 | 327,262 | 216,282 | 139,569 | 261,852 | 87,708 |
| Financial charges | 25 | 2,015,974 | 972,103 | 2,609,922 | 1,888,122 | 870,906 |
| | | 3,179,394 | 1,905,689 | 10,198,941 | 5,387,027 | 1,364,007 |
| Profit/(loss) before taxation | | 15,336,135.60 | 19,553,408 | 30,612,426 | 31,289,857 | 24,115 |
| Taxation | 19 | (4,526,321) | (5,791,503) | (8,964,225) | (7,474,448.91) | - |
| Profit/(loss) after taxation | | 10,809,815 | 13,761,906 | 21,648,201 | 23,815,408 | 24,115 |
| | | 6% | 8% | 11% | 16% | 0% |
| Exceptional items | | | | | | |
| Prior period adjustment | 27 | 3,345,128 | | | | (23,038,738) |
| Net Profit (Loss) After taxation | | 14,154,942 | 13,761,906 | 21,648,201 | 23,815,408 | (23,014,623) |
| 18,681,263.13 | | | | | | |
| Earning per share (EPS) | | 2.16 | 2.75 | 4.33 | 4.76 | 0.00 |

"The accompanying notes are an integral part of this statement"

FINANCE MANAGER | DY. GENERAL MANAGER-services | GENERAL MANAGER

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DESTA ALCOHOL AND LIQUOR FACTORY PLC
BALANCE SHEET
30 JUNE 2009

*Currency: Ethiopian Birr*

| ASSETS EMPLOYED | NOTES | | | 2008 |
|---|---|---|---|---|
| FIXED ASSETS | 3.1,4 | | 17,887,495 | 17,593,581 |
| LEASEHOLD LAND | 5 | | 2,342,964 | 2,374,715 |
| | | | 20,230,459 | 19,968,296 |
| CURRECT ASSETS | | | | |
| Stock | 3.2,6 | 13,148,598 | | 9,386,869 |
| Debtors | 7 | 3,209,906 | | 9,147,927 |
| Related party | 8 | 12,240,085 | | |
| Cash | | 4,981,496 | | 944,875 |
| | | 33,580,085 | | 19,479,671 |
| CURRENT LIABILITIES | | | | |
| Creditors | 9 | 1,738,860 | | 3,142,676 |
| Provision for profit tax | 10 | 4,649,136 | | 2,923,067 |
| Overdraft | 11 | 2,150,368 | | 1,333,718 |
| Medium term loan –Current maturity | 12 | 5,675,701 | | 3,212,747 |
| | | 14,214,065 | | 10,612,208 |
| NET CURRENT ASSET | | | 19,366,020 | 8,867,463 |
| | | | 39,596,479 | 28,835,759 |
| LONG & MEDIUM TERM LIABILITY | | | | |
| Medium term loan | 12 | 4,896,565 | | 5,038,158 |
| Leasehold payable | 13 | 2,138,199 | | 2,184,421 |
| | | | 7,034,764 | 7,222,579 |
| | | | 32,561,715 | 21,613,180 |
| CAPITAL & RESERVES | | | | |
| PAID UP CAPITAL | | | 2,000,000 | 2,000,000 |
| LEGAL RESERVE | | | 400,000 | 400,000 |
| PROFIT AND LOSS ACCOUNT | | | 30,161,715 | 9,213,180 |
| | | | 32,561,715 | 21,613,180 |




DESTA ALCOHOL AND LIQUOR FACTORY PLC
PROFIT AND LOSS STATEMENT
FOR THE YEAR ENDED 30 JUNE 2009

*Currency: Ethiopian Birr*

| | Notes | | | 2008 |
|---|---|---|---|---|
| SALES | 14 | | 54,624,170 | 54,359,878 |
| COST OF GOODS SOLD | 15 | | 23,194,165 | 28,189,421 |
| GROSS PROFIT | | | 31,430,005 | 26,170,457 |
| OTHER INCOME | 16 | | 180,352 | 69,149 |
| | | | 31,610,357 | 26,239,606 |
| EXPENSES: | | | | |
| Selling and distribution | 17 | 5,937,646 | | 6,053,022 |
| Administration | 18 | 4,310,360 | | 1,814,563 |
| Excise tax | 19 | 5,009,199 | | 6,608,874 |
| Demolished building | 3.5 | -- | | 1,117,976 |
| Bad debts written-off | | -- | | 71,760 |
| Audit fee | | 13,800 | | 13,000 |
| | | | 15,271,005 | 15,679,195 |
| OPERATING (LOSS) PROFIT | | | 16,339,352 | 10,560,411 |
| Financial charges | | | (686,232) | 748,337 |
| PROFIT BEFORE TAX | | | 15,653,120 | 9,812,074 |
| PROVISION FOR TAXATION | 10 | | 4,704,585 | 2,971,039 |
| NET PROFIT AFTER TAX | | | 10,948,535 | 6,841,035 |
| TRANSFER TO LEGAL RESERVE | | | -- | (40,753) |
| | | | 10,948,535 | 6,800,282 |
| PROFIT AND LOSS B/F | | | 19,213,180 | 2,412,898 |
| PROFIT AND LOSS C/F | | | 30,161,715 | 9,213,180 |

DALUL GRAVEL AND CEMENT PRODUCTS FACTORY PLC
BALANCE SHEET
7 July 2009

*Currency: Ethiopian Birr*

| ASSETS EMPLOYED | NOTES | | 2009 | 2008 |
|---|---|---|---|---|
| PROPERTY, PLANT AND EQUIPMENT | 2.1,3 | | 5,664,160 | 17,851,199 |
| DEFERRED EXPENDITURE | 2.3,4 | | 1,423,114 | -- |
| INVESTMENT | 2.6,5 | | 3,500,000 | 3,000,000 |
| LEASEHOLD LAND | 2.2,6 | | 1,846,878 | -- |
| | | | 12,434,152 | 20,851,199 |
| CURRECT ASSETS | | | | |
| Cash | | 3,022,963 | | 67,397 |
| Stock | 2.4,7 | 2,424,369 | | 2,933,814 |
| Debtors | 8 | 215,214 | | 3,011,032 |
| | | 5,662,546 | | 6,012,243 |
| CURRENT LIABILITIES | | | | |
| Creditors | 9 | 518,392 | | 337,190 |
| Advance – sales of machinery | | -- | | 8,697,265 |
| Provision for profit tax | 10 | 346,695 | | 88,746 |
| Bank overdraft | | -- | | 3,058,372 |
| Medium term loan –Current maturity | 11 | 2,373,045 | | 7,298,567 |
| | | 3,238,132 | | 19,480,140 |
| NET CURRENT ASSET | | | 2,424,414 | (13,467,897) |
| | | | 14,858,566 | 7,383,302 |
| Leasehold land payable | 12 | 1,836,172 | | -- |
| Medium term loan | 11 | 6,286,227 | | 528,839 |
| | | | 8,122,399 | 525,839 |
| | | | 6,736,167 | 6,857,463 |
| CAPITAL & RESERVES | | | | |
| PAID UP CAPITAL | | | 4,543,078 | 4,543,078 |
| LEGAL RESERVE | | | 231,826 | 185,375 |
| PROFIT AND LOSS ACCOUNT | | | 1,961,263 | 2,129,010 |
| | | | 6,736,167 | 6,857,463 |

Chartered Certified Accountants
Hailu Tsegay & Company



DALUL GRAVEL AND CEMENT PRODUCTS FACTORY PLC
PROFIT AND LOSS STATMENT
FOR THE YEAR ENDED 7 July 2009

*Currency: Ethiopian Birr*

| | Notes | | 2009 | 2008 |
|---|---|---|---|---|
| SALES | 13 | | 13,120,758 | 10,938,250 |
| COST OF GOODS SOLD | 14 | | 9,795,838 | 7,324,245 |
| GROSS PROFIT (LOSS) | | | 3,324,920 | 3,614,005 |
| OTHER INCOME | 15 | | 102,801 | 223,044 |
| | | | 3,427,721 | 3,837,049 |
| EXPENSES: | | | | |
| Administration | 16 | 1,563,363 | | 1,672,813 |
| Selling and distribution | 17 | 36,165 | | 183,537 |
| Bad debts written off | | -- | | 8,188 |
| Audit fee | | 20,000 | | 15,000 |
| | | | 1,619,528 | 1,879,538 |
| OPERATING PROFIT (LOSS) | | | 1,808,193 | (1,957,511 |
| Financial charges | | | 540,853 | 741,479 |
| PROFIT BEFORE TAXATION | | | 1,267,340 | 1,216,032 |
| PROVISION FOR TAXATION | 10 | | 383,352 | 377,196 |
| NET PROFIT | | | 883,988 | 838,836 |
| Dividend income | 2.6 | | 45,049 | 24,148 |
| | | | 929,037 | 862,984 |
| TRANSFER TO LEGAL RESERVE | | | 46,452 | 41,942 |
| | | | 882,585 | 821,042 |
| BALANCE BROUGHT FORWARD | | 2,129,010 | | 1,307,968 |
| Tax assessment on previous years | 18 | (50,332) | | -- |
| | | | 2,078,678 | 1,307,968 |
| DIVIDEND DECLARED AND PAID | | | 2,961,263 | 2,129,010 |
| BALANCE CARRIED FORWARD | | | (1,000,000) | -- |
| | | | 1,961,263 | 2,129,010 |

Chartered Certified Accountants
Hailu Tsegay & Company

## Messebo Building Materials Production P.L.C.
### Statement of Change in Equity
### For The Year End June 30,2009

Currency: Birr

| Particulars | Share Capital | Commutative Gain (Loss) | Legal Reserve | Total Birr |
|---|---|---|---|---|
| Balance at June 30,2008 | 740,000,000.00 | 697,774,269.25 | 53,696,321.85 | 1,331,470,591.10 |
| Increase in Capital | 0.00 | | 0.00 | (340,000,000.00) |
| Increase in Legal Reserve | - | - | 27,817,369.24 | 27,817,369.24 |
| Net Profit for the Year | - | 528,530,015.65 | - | 528,530,015.65 |
| Balance at June 30,2009 | 740,000,000.00 | 1,226,304,284.90 | 81,513,691.09 | 1,547,817,975.99 |

## Messebo Building Materials Production P.L.C.
### Comparative Balance Sheet
### Ended June 30,2009

Currency: Birr

| | | 2007-2008 | 2008-2009 |
|---|---|---|---|
| **Assets** | | | |
| **Non-Current Assets** | | | |
| Tangible Fixed Asset | (3) | 454,194,024.83 | 792,576,667.66 |
| Deferred Expenditure | (5) | 10,072,945.82 | 15,427,645.92 |
| Investment | (4) | 34,375,000.00 | 67,165,557.48 |
| | | 498,641,970.65 | 875,169,871.06 |
| **Current Assets:** | | | |
| Stock (Inventories) | (6) | 311,704,527.36 | 384,357,771.05 |
| Debtors & Prepayments | (7) | 961,351,133.55 | 1,053,380,083.34 |
| Cash and Bank Balance | (8) | 259,101,625.59 | 109,486,544.53 |
| | | 1,532,157,286.50 | 1,547,224,398.92 |
| Total Assets (Net) | | 2,030,799,257.15 | 2,422,394,269.98 |
| **Equity and Liabilities** | | | |
| **Capital and Reserves** | | | |
| Paid-Up Capital | (14) | 740,000,000.00 | 740,000,000.00 |
| Profit and Loss Account | | 591,470,591.10 | 807,817,975.99 |
| | | 1,331,470,591.10 | 1,547,817,975.99 |
| **Long Term Liabilities** | | | |
| Long Term | 16-a | 332,781,336.06 | 581,273,579.25 |
| **Current Liabilities** | | | |
| Creditors | 9 & 13 | 296,161,000.17 | 204,754,364.84 |
| Current maturity of long-term Loan | 16-a | 67,027,282.00 | 67,027,282.00 |
| Interest Payables | 16-b | 3,359,047.82 | 14,861,534.73 |
| Commitment Charge | 16-b | | 6,660,533.37 |
| | | 366,547,329.99 | 293,303,714.74 |
| Total Equity and Liabilities | | 2,030,799,257.15 | 2,422,394,269.98 |

## Messebo Building Materials Production P.L.C.
### Profit and Loss Statement
### For the Year Ended June 30,2009

Currency: Birr

| | | 2007-2008 | 2008-2009 |
|---|---|---|---|
| Net Revenue | (17) | 1,113,315,926.13 | 1,162,729,562.07 |
| Cost of Sales | (18) | 486,066,617.10 | 513,549,027.27 |
| | | 627,249,309.03 | 649,180,934.80 |